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Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



ON
UTERINE AND OVARIAN
INFLAMMATION;

AND ON THE

Physiology and Diseases of Menstruation.

BY

EDWARD JOHN TILT, M.D.

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FELLOW OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,
AND OF SEVERAL FOREIGN SOCIETIES.

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"More will be done, and better, and with greater ease, when every one does  
but one thing, according to his genius, at the proper time, and when at leisure  
from all other pursuits."—PLATO, *Republic*, B. II., Chap. XI.  
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PREFACE TO THE THIRD EDITION.

THE approbation bestowed on my mode of investigating the diseases of menstruation has been to me an additional motive to use every endeavour to perfect the work according to the original plan. I may say the same of the treatise on the diseases of the ovaries, and in re-writing it, I have had the satisfaction of being able to show that the main points, which were *affirmed* by me in previous editions, had been *confirmed* by high authorities at home and abroad.

In treating of Uterine Inflammation, I have had principally in view the pathology of the body of the womb, which is so important and so little understood, that it imperatively calls for further researches. If I have only been partially successful in attempting to unravel the obscurities that beset the study of internal metritis, I hope the difficulties of the undertaking may be pleaded in extenuation of my imperfections, and that my exertions may be useful in stimulating fellow-labourers to give the subject all the attention that it so well deserves.

60, GROSVENOR-STREET,
May, 1862.

PREFACE TO THE FIRST EDITION.

It is not without some degree of diffidence that I venture to add even a small volume to the number of those which overload medical shelves, for I feel that the flattering reception of an ephemeral production* offers no guarantee of similar success for a work addressed to the profession on the treatment of important diseases. Urged, however, by a conviction that books are not only useful to diffuse the knowledge of great discoveries, but also to connect those facts which, although sterile so long as they are left disjointed, assume importance when connectedly put together, I have here more methodically arranged, and more fully developed, views first expounded in a series of papers on the sub-acute form of ovarian disease, which appeared in the *Lancet* in 1849.

I am further induced to do so, because those contributions were favourably noticed in various organs of the medical press,† and also on account of the gratifying concurrence in my views which has been spontaneously offered to me by many of my brethren engaged in practice.

Perhaps it would not be unbecoming for me to state, that whether as pupil or house-physician to the Paris hospitals, I have, from the beginning of my career, enjoyed the full advantages of the widest field for uterine investigations which

* *The Serpentine* AS IT IS, and AS IT OUGHT TO BE; and *the Board of Health* AS IT IS, and AS IT OUGHT TO BE. 1848.

† *Edinburgh Monthly Journal*, 1849; Dr. Ranking's *Retrospect*, January and June, 1849; Braithwaite's *Retrospect*, January and June, 1849; *American Journal of Medical Science*, Vols. XLIII. and XLIV.; *London Journal of Medicine*, December, 1849.

can ever be afforded by a medical school ; and that whilst practising in Paris and in various other capitals of Europe, I not only had abundant opportunities of testing the value of my views relative to diseases of menstruation, but also of strengthening them by an acquaintance with the practice of those who so well represent our profession in each country.

I might even add, that since my return to England I have found abundant opportunities of confirming my peculiar views on the diseases of menstruation, while attending the numerous patients at the Farringdon General Dispensary and Lying-in Charity, and also those of the Paddington Free Dispensary for Diseases of Women and Children, to which institutions I am attached in the capacity of Physician.

My aim has been to perform, for the ovaries, the principal organs of menstruation, what has been successfully done for other organs by many eminent men ; and I feel assured, that although some of my deductions may be contested, my practice will be admitted by all to be indubitably safe, and necessarily destined to diminish the number and intensity of female complaints.

I can lay claim, *unfortunately*, to no discoveries ; but from an acquaintance with the literature of that branch of the profession to which I have devoted my chief attention, I feel justified in affirming that in no other work will the reader find so complete an account of the various ways in which sterility is produced by the action of inflammation on the ovarian tissues, of the great importance of ovarian peritonitis as a cause of disordered menstruation, or of the influence of ovarian inflammation in the production of uterine disease—facts forcibly exemplified and proved to be, not mere conventional possibilities, but events of frequent occurrence.

I must also observe, in reference to the numerous cases with which I have enriched my work, that I have given them more with a view of illustrating, than of establishing, each particular point of ovarian pathology. I have therefore taken

from my own case-book only those select cases which bear forcibly on the subject, borrowing from authors and contemporary observers, facts, rendered much more valuable by their not having been collected under the influence of the views which they will be found so admirably to exemplify. If I have derived my cases more from foreign than from British practitioners, it is simply because Continental obstetricians, having been the first to investigate scrupulously the diseased organs of generation by the combined assistance of the touch and of the eye, have been able, in many instances, to detect the hidden causes of those diseases which, until late years, were only guessed at, and could only be treated symptomatically.

As a fitting introduction to this work, I intended to prefix an essay on the natural history of women; but finding the matter to grow rapidly under my hands, and the vast importance of the undertaking becoming every day more perceptible, I have, for a time, desisted from the accomplishment of what must be considered the only rational introduction to any treatise on the diseases of women.

In noticing the many deficiencies of this work, the reader will also remember that it is the first systematic attempt to do, for the principal organs of generation in women, what has now been done for every other important organ of the body; and that, considering the rapid progress which has lately been made in ovarian physiology, it cannot be wrong if some one should seek to give to the pathology of the ovaries a development which would be greater and more satisfactory if the labourer were better able to accomplish his self-imposed task.

I cannot record the progress of ovarian physiology without testifying my admiration for the illustrious Regnerus de Graaf, who, nearly two centuries since, originated a movement which has only been followed up within the last few years. Can I better conclude this address than by borrow-

ing the words in which he ends the preface to his immortal work ?

“Vale itaque amice Lector, atque conatus meos non sine labore et sumptu adornatus, tibi que gratis oblatos, candido et benevolo (quo illos conscripsimus) animo, castoque pervolve.”

EDWARD JOHN TILT.

March 25th, 1850.

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ON
UTERINE AND OVARIAN INFLAMMATION,
AND ON
DISEASES OF MENSTRUATION.

INTRODUCTION.

THE dark ages of uterine pathology extend to 1816, when, by showing the possibility of an ocular examination of the womb, and urging the frequent necessity of doing so, Recamier enabled his disciples to apply to diseases of that organ the recognised sound principles of general pathology. All the works that were written on inflammation of the reproductive organs previous to that period are now almost useless, possessing merely an historical interest, like the uncouth Byzantine pictures which figure in our galleries. There can be no worthier representative of the old school of pathology than Sir C. M. Clarke, and he, although writing in 1821, and treating of uterine discharges at great length, has only twelve very unsatisfactory pages on inflammation of the uterine mucous membrane. Those who followed in the path opened by Recamier in 1816 have necessarily derived precision by adding ocular demonstration to the previously known methods of investigating the diseases of women. In the dark ages of gynecology, diseases of menstruation divide the whole of female pathology, whereas ocular investigation has taught us how many different organic lesions determine diseases of menstruation, and reduced to extremely limited size the chapters on Amenorrhœa, Dysmenorrhœa, &c. &c.

It will be sufficient to pass in review the received meaning of these traditional terms to see that inflammation, and the results of inflammation of the womb and of the

ovaries, figure largely in what is understood by AMENORRHEA, DYSMENORRHEA, MENORRHAGIA, LEUCORRHEA, and HYSTERIA. Thus I find that AMENORRHEA either implies—

Absence of organs of ovulation, their destruction, their chlorotic arrest of development ;

Sub-acute or acute ovaritis ;

Or it may represent the inflammation, or the obliteration, of the Fallopian tubes ;

Undersized womb ;

Inflammation of the womb ;

Its induration—*J. P. Frank ;*

Retroversion of the womb—*Dr. Rigby ;*

Morbid stricture, or obliteration of the neck of the womb ;

Ulceration of the neck of the womb—*Dr. H. Bennet ;*

Or the organs of reproduction may be perfect, but, under the influence of various acute and chronic diseases, the menstrual flow may be impeded or suppressed.

DYSMENORRHEA either indicates—

An undersized womb ;

Deviations of the womb ;

Inflammation of its body, or of the inner surface, with or without false membranes ;

Stricture of the neck of the womb ;

Its induration ;

Ulceration of the neck of the womb in nearly all extreme cases—*Dr. H. Bennet ;*

Cancerous affections of the neck of the womb ;

Coarctation of the vagina ;

And constitutional diseases, such as a rheumatic or gouty habit—*Dr. Rigby ;*

Sub-acute ovaritis ;

Pelvi-peritonitis ;

Tubal inflammation and partial obstruction, with flow of blood into the peritonæum ;

A neuralgic ovarian affection.

MENORRHAGIA represents either—

Uterine catarrh and internal metritis ;

Cancerous affection of the womb ;

Ulceration of the neck of the womb in nearly all cases—*Dr. H. Bennet ;*

Displacements of the womb ;
 Irritable uterus ;
 Sub-acute ovaritis ;
 A neuralgic affection of the ovaries.

LEUCORRŒA stands either for—

Chronic catarrh of the Fallopian tubes—*Rokitansky* ;
 Uterine catarrh ;
 Hyper-secretion of the mucous follicles of the neck of the
 womb in most cases ;
 Ulceration of the neck of the womb in most cases—*Dr.*
H. Bennet ;
 Various inflammations of the vagina or external organs in
 most cases—*Lisfranc* ;

Thus the same terms have been made to express very different morbid conditions.

With imperfect notions of the physiology of menstruation and of the diseases of the reproductive organs, our forefathers did right in grouping facts round the most salient morbid phenomena of menstruation, for it is the keystone of the pathology of women, and I maintain that the only way to well understand their diseases is to institute a comprehensive analysis of the varied phenomena of this function. In my last edition, I studied separately each of these phenomena, showing the transformation of each healthy symptom into a diseased one, and again tracing this same morbid symptom amongst those of healthy or diseased pregnancy and lactation, or amongst those of inflammatory and other affections of the reproductive organs, thus finding the prototype of most diseases of women in the performance of a healthy function, just as Lelut, in his work on the Demon of Socrates, has shown that there is a healthy type and origin for the chief forms of mental alienation.

The words AMENORRŒA, DYSMENORRŒA, MENORRHAGIA, and LEUCORRŒA, then, cannot be received as meaning substantive diseases, because vague and injudicious treatment would spring from vague and general terms. Such words can only be applied in an adjectival sense to point out the different morbid conditions of the organs of generation which produce in so many different ways the diseases of menstruation. This is no idle question of words, for any practitioner

well acquainted with the history of medical science will admit the "mighty governance of names," and it should be the aim of all writers to withstand, as much as possible, the encroachments of language on the reality of facts, and to abstain from using terms which may fetter the understanding and lead to erroneous notions and hap-hazard practice. If taxed with exaggeration, I would refer my readers to Sir C. M. Clarke, who says, "On no subject, perhaps, have there been more erroneous notions entertained, or more injurious directions given, than on that of diseased menstruation. Prejudice has occupied the place of Science, and a popular nostrum has been exhibited, often without, and sometimes with, the concurrence of the practitioner." As, therefore, it is owing to the erroneous notions conveyed by vicious denomination that the treatment of diseases of menstruation has been either the injudicious use of "the whip and spur," or else a no less fatal inaction, I shall endeavour to give greater precision to common language by using only the terms Amenorrhœa and Dysmenorrhœa, &c., when, from the impossibility of finding out any organic reason to explain the menstrual perturbation they indicate, such a condition may be considered *essential* and depending upon some unseen modification of the nervous influence presiding over the menstrual function. For similar reasons I prefer the term ovaritis instead of that generally used in this country—inflammation of the uterine appendages. I am fully aware that inflammation of the ovaria is often attended by that of the cellular tissue in which they are imbedded, by that of the Fallopian tubes by which their purposes are subserved, and of the serous membrane by which they are covered; but I object to the term alluded to, because in using it one loses sight of an organ, the importance of which is paramount, and the inflammation of which is not unfrequent, and generally entails that of the oviducts and cellular tissue. I object also to the term *appendages*, or *productions*, of the womb, because, in the hierarchy of our organs, the ovary ranks above the uterus, which is, in fact, as much the appendage of the ovaries as the urinary bladder is that of the kidneys; these hollow organs are equally subsidiary in their different purposes to the function of the respective glandular

structures with which they are connected. When there is no ovary, the uterus, should it exist, does not menstruate. It is the ovary which calls the uterus into action, imparting to it a stimulus which is either healthy or morbid, periodical or continuous.

I will, then, use the word *ovaritis*, because in so doing we designate a thing by its proper name—a name which has the great advantage of bringing palpably to the practitioner's remembrance an organ with all its manifold peculiarities of structure, locality, connexion, and physiological importance—a terminology which reminds him of the progress of such structural lesions which might be cured by appropriate anti-phlogistic measures.

The influence of names on the treatment of uterine disease will be shown by a brief historical sketch of those names that have been successively used since 1816, for each name represents what its inventor considered the frequent or the primary element of uterine disease. For Recamier, the main element of uterine disease was *Inflammation and Ulceration*, requiring surgical measures. For Lisfranc, it was *congestion and engorgement* of the neck and of the body of the womb, and prolonged repose was a principal means of cure. It was *uterine catarrh* of the body and neck of the womb, for Boivin and Dugès. By Chomel and Velpeau, *granulations of the os-uteri* were prominently brought forward. *Flexions of the womb* were discovered by Velpeau, and in the writings of Dr. Simpson, the *deviations of the womb* from its normal place became the chief disease of women, requiring the frequent use of intra-uterine pessaries, said to be well borne by the Scotch, but which have proved fatal to many women in England, France, and Germany.

Diseases of women were deduced from inflammation and *ulceration of the neck of the womb*, by Dr. H. Bennet, in "nineteen out of twenty cases," to use his favourite expression. Dr. Tyler Smith opposes this too exclusive view, and has nevertheless sought to prove that the bulk of diseases of women originate in the *hyper-secretion of the mucous glands* of the neck of the womb. *Ovaritis* sometimes causing uterine disease, and frequently pelvic peritonitis, was insisted on by the author, and subsequently by Aran. Nonat became

convinced that Lisfranc was wrong to admit partial hypertrophy of the womb, and that he was deceived by phlegmonous inflammation of the cellular tissue surrounding the neck of the womb, and he invented *peri-uterine phlegmon*, the very existence of which is contested, however, by Drs. Bernutz and Goupil, who affirm that he has united in one description two distinct diseases,—the well-known phlegmonous swellings of the broad ligaments, and a complaint little understood—*pelvi-peritonitis*. *Retention of menstruation* is the last element of uterine disease, which has been given as no less frequent than important by Drs. Bernutz and Goupil. Is it surprising, after all, that there should still be much obscurity in this department of uterine pathology, when, until 1842, most anatomists did not recognise a mucous membrane in the body of the womb, and had but an imperfect knowledge of that which lines its neck? The structure of the mucous membrane of the body of the womb was first clearly made out by Coste, and the mucous membrane lining the neck of the womb has only been well described of late.

If none of these views can be exclusively adopted, they must all receive due consideration to arrive at correct notions of uterine pathology. The most important in practice is the theory which Dr. H. Bennet and myself have received from our Paris teachers. The great frequency of inflammatory affections of the neck of the womb, the comparative facility with which they can be cured by surgical measures, the possibility of often curing co-existing diseases of the body of the womb and of the ovaries, by treatment applied to the neck of the womb, and the fact of no better plan of treating these more obscure diseases than by the application of remedies to the tangible portion of the diseased womb; all these considerations justify the preference. Moreover, health is as contagious as disease, and as our organs transmit, by continuity, healthy and morbid impulses, so, by maintaining the neck of the womb in a thoroughly healthy condition for a long time, it imparts its healthy tone to the body of the womb and thus cures it. For these reasons, and on account of its lesions being accessible, the neck of the womb has chiefly occupied the attention of pathologists, but as those most hopeful of success to be derived from surgical treatment

to the neck of the womb, frequently find it ineffectual, like sensible practitioners, they have asked themselves the following questions:—1. Why patients suffer much with very insignificant uterine lesions? 2. Why others suffer as much after the removal of inflammatory lesions of the neck of the womb as before their treatment?

The answers are, simply because all uterine pathology is not included in the neck of the womb. The body of the womb is a large field for the investigation of future pathologists, who have done little as yet but explore hesitatingly this difficult ground. Only those who have large opportunities of making post-mortem examinations in our great hospitals can perfect this portion of uterine pathology. I have no other pretension than that of clearing the ground for those more advantageously placed; and one thing is certain, that in all long-standing cases of uterine disease, inflammation has been transmitted to the lining membrane of the uterine crypt. This is to be ascertained by the well-educated finger, and by the clear-sighted mental eye, discerning the aspect of internal disease through the haze of misty symptoms, and if, after we have cured both the neck and body of the womb, some patients still continue to suffer, it is because the ovaries continue inflamed. That diseases of the ovaria should have received so little attention is not surprising; the diminutive size of the ovaria has caused them to be seldom considered as the starting-points of disease, while their being so deeply imbedded in the pelvic cavity is a sufficient reason for their affections not being detected by the ordinary modes of exploration. It must not be forgotten that in the unimpregnated state the ovaria are the centre of the sexual system, and that the other organs of that system, the uterus and the mammæ, are subservient to them. The similarity of the symptoms of sub-acute ovaritis, and of certain forms of metritis, is also a reason why ovaritis has often been completely overlooked, the symptoms being attributed to diseases of the womb, particularly since improved modes of investigation have drawn all our attention to such of these as admit of an easier diagnosis.

A still more important source of our ignorance of the milder forms of ovarian inflammation may be traced to the

obscure physiological functions of the ovaria. The ovary is the organ which, by its physiological impulse, excites the menstrual flow. Healthy menstruation is dependent on the healthy structure of the ovaria; for the phenomena of painful menstruation, when carefully analysed, will be often found to have, in common with sub-acute ovarian inflammation, lumbodorsal neuralgia. Now as menstruation is a natural process, it is supposed by women to be a part of those inevitable evils to which human flesh is heir, and however much attended by suffering, they imagine it useless for them to seek relief. Thus one is, generally speaking, not called in, or merely consulted incidentally, when the catamenia are accompanied by an amount of pain and other symptoms really sufficient to assume the importance of disease. Can it, then, be a source of wonder that we are little acquainted with all the forms of ovarian disease, when we are denied the possibility of studying them in their origin, in those deep-laid foundations of hysterical attacks, of a sterility which at first might have been prevented, or of those enormous tumours, for the existence of which there is afterwards so much difficulty to discover a cause? Tumours which usurp the place of all the viscera of the pelvis and abdomen; nay, even of the chest, and, generally speaking, leave women no other alternative than that of leading a life of misery, or of undergoing operations too often followed by speedy dissolution.

If I dwell on this subject, it is to impress on the mind the necessity of paying more attention to the phenomena of what is called painful and difficult menstruation, menstrual colic, and that Protean female infirmity, named hysteria, as well as to point out the necessity of taking into consideration not only the vicious preponderance of those nervous forces which give life and impulse to our organs, and determine the quantity and quality of the blood—their liquid pabulum; but also, as far as possible, the exact local state of those small, yet most important organs, whose altered conditions of structure, of blood, and of nervous influence, produce morbid menstruation as an actual evil, and menace the patient with a life embittered by the various forms of incurable ovarian disease. “*Principiis obsta, sero medicina paratur.*” As the practical result of these views, one will

no longer rest satisfied with treating painful menstruation by brandy-and-water, hysteria by sal volatile, and suppressed menstruation by internal and external stimulants; but having detected the local seat of mischief, it will be at once attacked energetically, with a curative and not merely a palliative intention.

Some perhaps may say, "Though we have not called the disease ovaritis, still we have cured it while treating metritis, painful menstruation, &c., by which it was accompanied." It would not be difficult to prove, that though the complicating disease may be cured, the ovarian inflammation will often be only alleviated; the patient may be said to be cured, owing to an insufficient local examination, yet the ovaria remain in a state of sub-acute inflammation, subject to a relapse on every monthly return of ovarian periodicity, or on the accession of any one of the numerous causes of ovarian irritation. A fit soil for disease to spring from, or to take root in and develop itself, until at last it is recognised, but found to be incurable!

With regard to the frequency of diseases of the womb, I do not think it has been exaggerated of late years, neither do I esteem these diseases to be increasing in frequency, for as a complaint is more studied it appears more frequent, which has been the case with diseases of the womb, as it was with those of the heart and of the brain. The frequency of erosions and slight ulcerations of the neck of the womb has been established by the statistical inquiries of Dr. West; indeed, so frequent did he find these lesions, that he came to the conclusion that they were unimportant, and this would be correct, to a certain extent, if such lesions were to be considered as pathological entities occurring accidentally; but the habitual existence of such lesions shows an habitually unhealthy condition of an important mucous membrane. Dr. West; and many other pathologists, forget that these lesions are less important in themselves, than for what they portray; and that, as the furred tongue marks an unhealthy state of the gastric mucous membrane, so the habitually eroded circle round the os uteri usually shows that the mucous lining of the cervix is inflamed, even when it is not possible to inspect it.

Before inquiring into the frequency of ovarian inflammation, some explanations are requisite.

Martin Solon has said that "Ovaritis is a disease which has not yet been carefully described by authors, but that they have gathered together a considerable number of facts, by means of which it would not be difficult to describe the disease." It was the discovery of the real function of the ovaries alone which suggested my collecting on all sides, facts hitherto little noticed or unexplained—the *dissecta membra*, into which, in a first edition, I attempted to infuse life by placing them side by side, so that they might explain each other. In the opinion of almost all those who have alluded to the subject in their writings, as well as in that of the generality of practitioners previous to the publication of my first edition, ovaritis was supposed to be a disease only to be met with in the puerperal state, forming one of the varieties of pelvic tumours, and consisting of an extensive swelling and suppuration of the ovaries, attended by alarming symptoms of puerperal fever. The idiopathic form of acute ovaritis, first established by Montault, has since been described by others, who have brought forward cases to prove that, independently of the puerperal state, the ovaries may be acutely inflamed, and even become the seat of extensive suppuration, and thus constitute one species of pelvic tumours. It was also admitted, *pro formâ*, by some authors, that the ovaries may be affected with chronic inflammation, but they disposed of the complaint in a very hurried manner. An excellent authority, Valleix, is indeed afraid of describing it until more precise information has been obtained.

Such is, in brief, what is generally admitted respecting ovaritis; but as the study of phthisis is not merely confined to the consideration of those caverns formed by the melting away of tubercular masses; as the idea we have of pneumonia is not entirely connected with the state of the pulmonary tissues in the last stage of the complaint; so we may safely admit that there are other forms of ovarian inflammation besides the acute form—whether idiopathic or puerperal—described by authors. This form of ovaritis has attracted most attention because it is most striking; but it will not be difficult to prove that it is the most uncommon, while the

sub-acute variety, whether alone or associated with various diseases, is of very frequent occurrence.

That the ovary, which is the *punctum saliens* of animated matter, and the mysterious source whence it has pleased the Almighty to let flow, through time, the stream of human life, should not be frequently subject to disease would be, at least, singular. It is likewise improbable that the eccentricities of civilization, which have rendered the different organs of our frame so prone to disease, should not have also increased the ovarian disorders. Without appealing to the testimony of the older writers, though I am far from despising authorities with which I am less conversant than with the book of Nature, I shall merely quote a few modern authors, who will prove that they were fully aware of the existence of something more than they could describe, and that they hint at, and even admit, the frequency of such forms of complaint. Thus, in his 46th letter, Morgagni says: "If I wished to enumerate all the lesions of the ovaries and oviducts which I have seen in my dissections, this letter would be the longest of all." Krüger, in his valuable thesis, *Pathologia Ovariorum*, Göttingen, 1782, exclaims, "How frequently have authors noticed the numerous anatomico-pathological lesions of the ovaries! But of what avails such information, if they do not describe their cause and symptoms?" Sir C. M. Clarke asserts that "Every one at all accustomed to examine dead bodies must have seen a variety of examples of disease in the ovaria, where no symptoms of such complaints were displayed in the lifetime of the patient. The author has met with large abscesses in them, and in other parts, where no evidence had existed that such complaints were present." A writer on diseases of women, says—"We can have no hesitation in believing that the ovaria and the Fallopian tubes must, for many years of female life, be the common seats of disease; and probably some of the most obscure cases occurring in medical practice belong to chronic ovaritis, especially where we cannot trace the symptoms to an acute attack." Again, Dr. Ashwell says—"Dull and heavy pains in the region of the ovary, lasting for months, are the consequence of chronic inflammation of the ovaries; I mention the circumstance

because they are too often regarded as neuralgic, and treated accordingly ; painful menstruation and sterility being their results." And again : " Of all the organs of the human body, scarcely any seem so prone either to functional or organic disease as the ovaries ; for I can with truth say that I have rarely, when examining these important organs after death, found them entirely healthy." Dr. Lee tells us that—" The adhesions between the ovaria and the Fallopian tubes being so frequently met with in examining the bodies of women, of different ages and conditions, prove that slight attacks of inflammation of the peritonæal coat of the ovaria, are not of rare occurrence, and that their presence is seldom discovered during life." And again, he remarks, " That in the many cases of disordered menstruation, chlorosis, and hysteria, which we have observed, the symptoms have been clearly referable to certain morbid states of the uterine appendages, and decided benefit has resulted from the application of those local remedies which were employed with the view of subduing the irritation, the congestion, or the inflammation which appeared to be present in these parts of the uterine system."

In Germany, Neumann did not scruple to remark that—" Of all the organs of the human frame, none are so often affected by disease as the ovaries. Suppressed menstruation, which is a frequent cause of sterility, can generally be traced to disease of the ovaries." And J. P. Frank, when giving an account of his travels in this country in 1806, mentions that Dr. Cheston, of Gloucester, looked upon menstrual colics as produced by inflammation of the ovaries, and adds, that on his return to Wilna, he attacked such cases by an antiphlogistic plan of treatment, and with much greater success than had formerly attended the exhibition of stimuli.

Adding his testimony to that of so many others, Meigs writes : " I am persuaded that the knowledge of these important organs is vague, and that the most serious of their maladies are of a nature so insidious as to allow them to become considerably advanced and firmly established long before they are explained by the pain or incon-

venience of the interrupted function to which they give rise." And a judicious reviewer observes that—"Our ignorance of ovarian inflammation is one of the strongest proofs that can be given of the little attention uterine pathology has received."—*British and Foreign Medical and Surgical Review*, January, 1850.

With respect to acute ovaritis, although it occurs more frequently than is generally believed, it is still less frequent than in the puerperal state. The frequency of inflammatory lesion of the ovaries was noted by Antoine de Jussieu, Albert de Villiers, and Fontaine, at the Hôtel Dieu of Paris, in 1746, and was prominently brought forward in 1781 as one of the most frequent causes of death in puerperal women, by J. George Hoffman. The frequency of puerperal ovaritis varies according to the nature of the reigning epidemic influence, but it at all times exceeds what is generally admitted; for if, on the one hand, Madame Boivin and Dugès only found 35 cases of ovaritis in 686 of metro-peritonitis—suspecting, however, the same disease in many other cases—Tonnellé, on the other hand, found, in 222 cases of puerperal fever, 197 cases of inflammation of the womb and of the ovaries; ovaritis was evident in 62 cases; in 4 of which it had ended in suppuration. Dr. Lee found the ovaries and Fallopian tubes inflamed in 32 out of 45 cases of puerperal fever. At other times, in all those who die of this disease, evident signs of inflammation of the ovaries are met with; such was the case at Vienna in 1819.

In the epidemic described by Dr. Gordon, of Aberdeen, the ovary was generally diseased, being red, and swollen to the size of a hen's egg, containing pus, or destroyed by a purulent process, and pus found in the abdomen. The softening and disorganization of the ovaries were amongst the most frequent appearances in the Manchester epidemic mentioned by Mr. Robertson. In one case, twenty-five hours after death, appearances of putrefaction existed in various parts of the body, and the ovaria resembled masses of venous blood.

Acute idiopathic ovaritis is a rare affection, and while admitting, with Drs. F. Churchill, Gendrin, Valleix, and

Fauvel, that it is much more frequently a cause of pelvic abscess than is generally admitted, still it is comparatively rare. I repeat the statement, because the contrary may be gathered from Dr. H. Bennet's valuable work, and I cannot admit with him that the pus resulting from this cause, when it passes by the vagina, is frequently mistaken for "the whites," for it is preceded and accompanied by symptoms too acute, in the majority of cases, not to attract great attention. Dr. R. Lee relates that in the course of his practice he has only met with four cases of idiopathic ovarian abscess.

I believe, with Neumann and Astruc, that sub-acute ovaritis is a common disease; and without admitting that it could always be found on the dead body, the morbid congestion leaving the ovary when life becomes extinct, still I refer to the frequency of lesions found in the ovaries. Mr. Pollock has shown that out of 583 women opened at St. George's Hospital, from 1841 to 1850, 265 presented lesions in some part of the generative apparatus, and in 116 were found the following lesions:

Adhesion of ovaries	13
Congestion	17
Scrofulous deposits	4
Fibrous	1
Cartilaginous	1
Calcareous	2
Cystic tumours	51
Cancerous	18
Atrophy—not senile	8
Displacement	1

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The thirteen adhesions were evident cases of ovarian peritonitis, and as I shall hereafter show that this is generally caused by ovarian inflammation, its frequency may be, to a certain extent, inferred from the frequency of these relics of pelvi-peritonitis, which is estimated at 70 per cent. of all bodies examined in the hospital dead-room by Dr. West, at 55 by Aran, 45 by Dr. Gaillard, and 44 by Drs. Bernutz and Goupil.

Such was the state of pathology when my first edition ap-

peared in 1848, and the main points therein developed were—

1. The frequency of inflammatory affections of the ovaries and of the pelvic-peritonæum.

2. The influence of the ovaries in the production of pelvic-peritonitis.

3. The influence of the ovaries in the production of uterine disease.

My first proposition has been confirmed by late writers on diseases of women, and by contributions to the leading medical periodicals. The large hospital experience of Aran, Bernutz, and Goupil, has amply confirmed my statement that pelvic peritonitis in women is generally caused by ovaritis.

My assertion that the ovary has a powerful morbid influence over the womb, already admitted by Blundell, Rigby, Oldham, Recamier, Melier, &c., has been again asserted by Dr. Gaillard, and in a measure demonstrated by Aran, who observes, p. 613, "Acute and chronic ovaritis is much more common than is generally admitted. For the last few years, during which I have given more attention to the condition of the ovaries, never failing to examine them as well as the womb, in every post-mortem examination; I have become surprised at the frequency of ovaritis, alone, or associated with internal or chronic metritis; if when these are cured, the old pains survive, strong as ever, they are due to the persistence of ovaritis." And again, p. 602, he says, "Chronic ovaritis forms an important element in the most distressing cases of uterine disease, when it has told most severely on the general health, and if this remark has not been previously made (!) it is because the coexisting uterine disease seemed to render unnecessary the search after ovaritis."

My friend, Dr. H. Bennet, admits—*Uterine Pathology*, p. 52—the coexistence of chronic ovaritis and uterine disease in exceptional cases, but denies the practical import of ovaritis as a primary element in complicated cases, because the ovary has no mucous membrane, like the uterus. This argument has been disposed of by our mutual friend Aran, who says, p. 39, "I loudly protest against Dr. H. Bennet's pretension to sweep away ovarian pathology with one stroke

of his pen. How can we treat disease of the womb without at the same time treating disease of the ovary, should any exist? Have not both organs the same nerves and vessels, and are not they united for common action? What does it avail that the ovary has no mucous outlet? the heart and brain have none, and that does not prevent their having pathological manifestations, both numerous and dangerous."

With regard to the comparative frequency of uterine and ovarian disease, I have no statistical data to offer; but if I were asked to give the results of twenty years' practice, I should say, that congestion of the ovario-uterine organs with an unhealthy condition of the mucous membrane lining the neck of the womb, and erosions of its vaginal portion, is the most frequent of morbid uterine conditions, and being often cured by nature, is amenable to whatever treatment may be used. That the most numerous cases for which our aid is required are those in which there is more or less ulceration round the os-uteri, with more or less swelling of the neck of the womb, and inflammation of its lining membrane, cases which are seldom cured without surgical treatment. That in the majority of very severe cases there is internal metritis, which has ovaritis as a primary element of disease, particularly in virgins—the most difficult of all cases to cure.

There is little written on the comparative frequency of uterine and ovarian disease, but in a paper on Sterility, Mayer, of Berlin, states, that out of 263 cases, the womb was either in flexion or version in 35, that there were 13 cases of internal metritis, 8 of chronic ovaritis, 7 of ovarian tumours, 4 of hypertrophy of the womb, 2 of uterine polypi, and 1 of fibrous tumour of the womb.

Taking at random 100 cases of uterine disease, Aran found it complicated by—

Catarrhal affections of the chest in . . .	31 per cent.
Consumption	25 "
Inflammatory affections of the ovaries . .	18 "
Diseases of the heart	9 "

A still more important document was sent to Dr. H. Bennet by Dr. Stewart, late Professor of Midwifery at the Medical College of Calcutta. It is a memorandum of the

state of the genital organs in the bodies of fifty native Indian women, who died from various diseases, drawn up by Madoodsun Goopta. I there find that uterine disease was complicated by some disease of the ovaries or Fallopian tubes, in 31 out of the 50 cases, these organs being noted as healthy in only 19 women.

The ovaries were red and congested in	. .	3 cases.
" " inflamed	. . . . .	7 "
" " absorbed or atrophied	. .	9 "
" " hard, horny, or scirrhus	. .	3 "
The ovary contained hydatids	. . . . .	1 "
The oviducts were inflamed	. . . . .	3 "
" " adherent	. . . . .	2 "
" " obliterated	. . . . .	7 "

I have depicted without exaggeration the still vacillating state of uterine pathology, and shown how difficult it is for beginners to acquire proficiency in this department of medicine. It is therefore obvious that the mind requires the assistance of every sense that can minister information, and nevertheless there are still some who praise the Stethoscope and Plessimeter, the Laryngoscope, the Ophthalmoscope, and who see no objection to the use of a Speculum for the ear, for the rectum, &c., but who have not words strong enough to condemn the use of one for diseases of the womb. It would be absurd to lose time in explaining the frequent necessity of this mode of examination, for the question is not, whether it has been abused by some, or too much neglected by others, but whether the diagnosis of surgical diseases has become so sure, that it can dispense with any means of throwing additional light upon the case under consideration. Should, however, practitioners require an explanation of the grounds which warrant such an examination, let them refer to Sir C. M. Clarke's work. Vol. i. p. 43. The principles of science, when once unveiled, may be obscured by false reasoning, but they cannot be obliterated, and the arguments by which, in 1814, this respected author advocated the digital examination of the womb, equally apply to its ocular examination in 1862.

I shall proceed, therefore, to comment on the several modes of exploring diseases of the womb and ovaries, after

reminding the reader of their anatomical connexions. The peritonæum in the female, after covering the posterior surface of the bladder, is reflected to the uterus; spreads over the exterior surface of the body of that viscus; covers its posterior surface; and is then again reflected to the rectum. As it passes from the anterior to the posterior aspect of the uterus, the membrane forms two wide folds, which contain the Fallopian tubes, the ovaries, and the round ligaments. The two folds of the peritonæum, which thus, by their juxtaposition, constitute the broad ligaments, are separated from each other, as also from the organs which they contain, by a certain amount of areolar tissue. This areolar tissue is connected with the sub-peritonæal cellular tissue of the pelvis, although in a great measure distinct from it; and it deserves more attention than it has hitherto received from either anatomists or pathologists. From its nature, it is prone to inflammation; and, consequently, it plays a most important part in inflammatory disease of this region. Its mechanical use is, no doubt, to allow the folds of the peritonæum to separate and glide one over the other, when the uterus increases in its dimensions during pregnancy. When the uterus is in its healthy and unimpregnated condition within the pelvis, the ovaries, with the intestines superimposed, are situated at the sides of the womb, behind the bladder, and anteriorly to the rectum; but, in consequence of their great mobility, and the laxity of their attachment to the uterus, they are so placed that, if at all increased in volume, they acquire a tendency to descend into the recto-vaginal space, and are then generally accessible to the finger introduced into the rectum. When, on the contrary, the uterus is enlarged, from impregnation, hypertrophy, or any other cause, it rises from the pelvis into the cavity of the abdomen, and the ovaries, following its ascent, are removed beyond the reach of a digital examination per vaginam. When the volume of the ovary is not such that it can be felt through the abdominal parietes, it may sometimes be appreciated by an examination per rectum, for in certain individuals the mucous membrane of the vagina is so relaxed in its connexion with the cervix uteri, that the finger may reach the ovary by depressing the *cul-de-sac* which exists at this spot.

Concerning the relation of the ovaries to the neighbouring parts, Dr. Chereau aptly remarks, that abnormal displacements of the uterus, such as retroversion, anteversion, &c., entail marked changes in the position of these glands, as do also tumours of the peritonæum, and morbid collections within its folds. And still more important is it to observe that, on the other hand, morbid affections of the ovaries, especially such as modify their volume and weight, act directly on the uterus, incline it to the right or left of the median line, and may so force it downwards as to produce a descent of the uterus, or to render it immoveable. It is of great importance to remember this fact, and to know how to discriminate between a simple displacement of the uterus, and one which is produced solely by an affection of the ovary, for the prospect of relief is much greater in the former case than in the latter; and many distressing mistakes have occurred from the want of a proper diagnosis.

ABDOMINAL EXAMINATION.

At first sight nothing seems so easy as to derive information from this ordinary mode of exploration, but such is not the case; it is even difficult to convey by words those niceties of manipulation which can only be attained by repeated practice. Some useful suggestions have, however, been made. The intestines and bladder having been previously emptied, the patient should lie on her back, with the head and shoulders elevated, and the thighs so placed as to form nearly a right angle with the body; the medical attendant should then ask the patient such questions as may divert her attention, and hinder the contraction of the recti-abdominis muscles, the divisions of which have, by the inexperienced, been sometimes taken for tumours. Before making an examination the practitioner should wash his hands with soap and warm water, to cleanse, soften, and to increase their tactile sense, to avoid reflex muscular contraction of the abdominal muscles, and to give the patient an idea of the care with which the case is undertaken.

“Pressure,” says Ritchie, “directed backwards towards the brim of the pelvis, from a point a little upwards from the

curve of Poupart's ligament, will strike the ovaries and detect swelling and pain in them should it exist." Should a tumour be found, its peculiarities should be studied, by varying the position of the hands, the degree of their pressure, and the posture of the patient, in order to ascertain the site, size, and connexion of the growth, whether it be fixed or moveable, soft and yielding, hard, pulsating or otherwise, fluctuating or solid. After parturition, the laxity of the abdominal walls is such as to allow of a more accurate manual examination, for the hand can then plunge into the deepest abdominal recesses. I may add, that a careful examination of this description should never be omitted after confinements, in order to detect any incipient abdominal tumour. Thus, in three of the cases recorded by Madame Boivin, in her *Mémoire sur une des Causes de l'Avortement*, the accoucheur, by neglecting this, failed to recognise the development of ovarian disease, which afterwards proved fatal by bringing on abortion. It is also sometimes possible to discover where adhesions have taken place between a tumour and the abdominal parietes, by a feeling of crepitation and a sound as of new leather, which sign, first detected by the sagacity of Dr. Bright, I have observed in several cases. Is it necessary to state, that unless the swelling of the ovaries be considerable, or the abdominal walls thin, it may not be discovered by this mode of exploration, and that it will be indispensable to combine it with an

EXPLORATION PER VAGINAM.

To derive the greatest amount of information from a vaginal exploration, the medical attendant should be placed on that side of the patient where ovarian tumefaction is rendered probable by pain or other signs, and he should use the index finger of the hand corresponding to that side, while he places the other hand on the hypogastric region, so as to press the ovary forcibly down towards the exploring finger. Recamier was in the habit of passing his hand under the patient's thigh instead of above it, so as to obtain greater facilities of investigating both the womb and the ovaries. A prolonged warm hip-bath, a brisk purgative, a

long walk, will bring lower down a womb by nature placed too high, and it is often useful to examine a patient in the erect attitude as well as in the reclining posture. Dr. Ritchie confirms my assertion, that, in these subjects, a very moderate amount of painful enlargement of the ovary can be detected by combining the hypogastric and the vaginal touch. He thinks he has best succeeded in detecting sub-acute ovaritis by examining the patient in the erect posture. Under all circumstances it will be necessary to raise the vaginal *cul-de-sac*, which surrounds the os uteri, by pressing the perinæum with the three bent fingers, and, when possible, by introducing both the middle and index fingers into the vagina, which gives an additional third of an inch to the exploring instrument. One is thus enabled to estimate the amount of pain caused by pressure on the swollen ovaria, as well as the degree of heat of the vagina, and whether its superior curve is elastic, or hard and resistant, as if infiltrated. Even where no ovarian tumour can be felt, Dr. Ritchie thinks it may be inferred from a highly characteristic pain along the groin, on percussion of the top of the vagina by the finger. Professor Simpson and Dr. Gendrin state, that in numerous cases they have felt enlarged ovaries *in situ*, by bringing the organ between two fingers introduced into the vagina, while the other hand was pressed down into the brim of the pelvis on the same side. The uterus, in Dr. Simpson's opinion, requires to be anteverted, and somewhat turned to the opposite side with the uterine sound, in order to stretch the broad ligament of the side under examination. He first ascertained the possibility of making this examination of the ovary in a case of natural anteversion of the uterus. When the tumour has so increased that it is no longer entirely situated in the vicinity of the vagina, but has ascended towards the brim of the pelvis, the finger, though it cannot reach its whole extent, will still afford valuable information respecting its position and state. Thus, the tumour may depress the uterus to the right or to the left, may flatten it against the pelvis, causing its complete retroversion, and thus render it impossible for the finger to attain the os uteri. M. Robert, of Paris, has met with several cases of this description. One is also able to examine the condition

of the inferior segment of the uterus, and to ascertain how far its usual mobility has been encroached upon, and to what extent this organ has been bound down by the thickening and infiltration of the adjacent inflamed tissues.

By a vaginal exploration, one is able to discover whether the tumour is intimately connected with the body of the uterus, or only placed in close juxtaposition to it; thus, in puerperal congestion of the broad ligaments, the tumour is often so moulded as to cap the uterus. In such cases, it is interesting to ascertain whether these bodies adhere intimately, for if the movements communicated to the tumour through the abdominal parietes are felt by the finger placed in the vagina, it may be supposed that the tumour and the uterus are intimately connected: one also obtains a correct notion of the diameter of the tumour, one of the extremities of which is at the hypogastrium, and the other in connexion with the vagina. The fluctuation of an abscess of the ovaries, or of their surrounding cellular tissue, may sometimes be distinctly felt by a manual examination, particularly after parturition; but even then it is necessary to support the tumour by placing the finger in the vagina, otherwise the semi-mobility of the whole tumour might easily be mistaken for the mobility of its contents. When thus exploring, it is sometimes possible to detect a correspondence of fluctuation between the hand on the hypogastric region and the finger in the vagina; and this is generally the case with sanguineous pelvic tumours. When the tumour is situated sufficiently low down, fluctuation may be detected by examining the patient *per vaginam*; two fingers—the index and the middle finger—being introduced into the vagina, and placed so as to embrace a segment of the tumour. One finger must then be firmly applied to the tumour to receive the shock transmitted by the fluid, while percussion is made with the other finger on the opposite side of the tumour. In the meantime, an assistant, by firmly pressing in the hypogastric region, forces the fluid to accumulate as low as possible in the pelvis. The facility of thus discovering fluctuation will be in direct proportion to the thinness of the parietes of the tumour, and its prominence in the vagina. If this mode of investigation fails to render evident the existence of pus,

the presence of which is otherwise indicated by rational symptoms, an exploratory puncture will decide the question without subjecting the patient either to much pain or to imminent danger.

For the practitioner's protection, it is well to wash the hands immediately after making a prolonged digital examination of cancerous and suspicious cases, and before introducing the speculum, particularly if he happen to be in an indifferent state of health ; a tablespoonful of Condyl's disinfecting fluid may be added with advantage to the water.

EXPLORATION PER RECTUM.

I agree with Stoltz and Hirtz—both distinguished professors of the faculty of Strasburg—with P. Frank, Neumann, Schönbein, Romberg, Löwenhardt, Carus, in Germany, with Velpeau and Chereau in France, and at home with Drs. Ashwell, Laycock, Rigby, Ritchie, Seymour, and Mr. S. Lee, that it is frequently possible to reach the ovaries, in their natural situation, by this mode of exploration, and thus to appreciate their volume and their degree of sensibility. Mr. Canton has lately mentioned having been able to do so on the dead body. Dr. Simpson expresses a contrary belief, stating,—“ We believe that in this way we may ascertain the existence of morbid tendency in the vagino-rectal reflection of the peritonæum, which may be done, also, by a vaginal examination ; and further, that we may touch the ovary when it is much enlarged or distended with purulent matter ; but we entirely doubt the possibility, as a general rule, of the finger easily reaching the natural situation of the ovary, and ascertaining its degree of tenderness and swelling. We have, in several examples, endeavoured to ascertain the truth and applicability of this diagnostic mark upon the dead subject, and find it altogether impossible to touch the ovary *in situ*, even with a very long finger, except where the pelvis is unusually shallow.” A reviewer of my first edition so far agrees with Dr. Simpson as to affirm that the unenlarged ovary can only be reached, provided the patient have a shallow pelvis with thin yielding structures, and will lie quiet and passive under examination, but that without these

advantages the ovaries cannot often be reached. Whatever difference of opinion may exist upon this point, all agree that, on account of the thinness and elasticity of this membranous canal, even slight swellings of the ovaries or the neighbouring tissues may be thus easily detected; and that when the tumour is considerable, it may be the more readily distinguished from the uterus. The most effectual way of performing this examination, and that which permits the finger to reach a greater height, is to place the patient in the English obstetric position, and to use the hand of the same side as that on which the patient is lying, by which the pulp of the finger is most readily brought into contact with the back of the uterus. It is sometimes useful to make the patient lie on the right side to examine the right ovary, and on the left side for the left ovary; and it is worth remembering, that the way to overcome the resistance of the sphincter ani to this practice, is to cause its muscle to be put in action. Meissner and other German obstetricians think they facilitate the examination by telling the patient to approach as much as possible the knees to the breasts.

When introduced into the rectum, the finger can generally attain and circumscribe half of the posterior surface of the uterus; and if not accustomed to this mode of examination, the medical attendant will esteem the healthy uterus to be morbidly swollen. The finger will also be able to detect any swelling of the broad ligaments, and likewise to feel the ovaries, when they are somewhat swollen, like a knuckle on either side of the uterus, seeming to spring from one or the other of the sacro-iliac articulations. When its structure is healthy, no pain is experienced on pressure of the ovary; but when it is inflamed, the patient often expresses, by her features, that the seat of the disorder is touched. While examining per rectum with the one hand, the other should be placed on the region of the ovary on the same side, the finger being in the rectum, and the physician pressing gently, but suddenly, with the other hand, on the ovarian region, and the patient will then experience, in the posterior part of the pelvis, a pain similar to that felt when the ovary was directly pressed by the finger. Pressure on the ovary also produces as much pain in the inguinal region as if that

were the actual seat of the impact. If the ovary be much swollen, and the abdominal parietes thin, it is possible, by pressing the ovarian region, to force the ovary against the finger; and this will frequently cause the patient to exclaim that we hold the complaint between our fingers. The existence of a painful tumour in the recto-vaginal *cul-de-sac* is in itself a strong presumption of its being the inflamed ovary; but the diagnosis will be assisted by the sound being passed into the bladder, and the uterine sound is of still greater value, for it enables one to raise the uterine fundus, and thus, by displacing the womb, to prove that the painful tumour is the ovary and not the uterus. This mode of examination is far from being required in most of the cases which come under my observation, but would be indispensable to give certainty to the diagnosis. Is it necessary to state, that if a fluctuating tumour be situated in the immediate vicinity of the rectum, nothing will be easier than to detect fluctuation by a rectal exploration? Lisfranc and Columbat consider the rectal examination is often preferable for young women in whom the hymeneal membrane does not permit an examination per vaginam, but this mode of examination cannot be substituted for a vaginal exploration, rendered possible by the dilatation of the hymen, in case there should be sure signs of uterine inflammation, and after long use of medicated injections and constitutional remedies.

DOUBLE-TOUCH.

I have given the name of "double-touch" to a mode of exploration, wherein the two previous modes are combined, so that the index finger being placed in the rectum, and thumb in the vagina, it is possible to embrace between the thumb and finger any intervening morbid growth.

P. Frank recommends this mode of examination. Dr. Blundell used to employ it, and taught its value at Guy's Hospital, in difficult cases; but Recamier has principally insisted on, and practically exemplified, its utility, as I shall hereafter have occasion to show, in some interesting cases. It is particularly useful in enlightening us respecting moderate sized tumours, which are not large enough to rise above

the brim of the pelvis, and still small enough to escape identification by the finger, in the rectum or the vagina alone. It enables one to seize the antero-posterior diameter of the tumour, and to recognise its position; and it prevents the uterus being mistaken for a morbid growth. If, as is often the case, the recto-vaginal space is the seat of the tumour, by thus practising the double-touch, and pushing up the perinæum, by pressing on it with the first inter-digital space, the accessible part of the tumour can be embraced and its fluctuation easily detected if fluid be present. An experienced reviewer states that, for the thumb, he had often, with advantage, substituted the forefinger of the other hand, so that the swelling might be felt between the two forefingers; and I find that this allows a deeper stretch into the vagina, and is, therefore, available in cases where the usual mode would be useless. The practical value of the double-touch is particularly shown in the following cases; the first is extracted from the interesting memoirs of Dr. Bourdon—*Mémoires sur les Tumeurs fluctuantes du Bassin, Revue Médicale*, and illustrates the advantage of the double-touch, by which means alone Recamier was able to detect fluctuation in a tumour situated in the recto-vaginal space:

CASE 1.—A woman, aged twenty-four, previously in good general health, but often affected with leucorrhœa and abdominal pains, eight months before, gave birth to her second child. About a month before that she was seized suddenly, without any apparent cause, with shivering, fever, vomiting, pain and tension in the abdomen. These symptoms were followed by irregular shiverings during the day, and by nightly perspirations. When she entered the Hôtel Dieu, May 1st, 1840, she was labouring under great depression, pain, and headache. The tongue was white; there was sickness, thirst, and constipation; pulse 100. After a careful examination of the abdomen, a hard tumour, having the shape and size of the head of a fœtus, was found on the right side, extending towards the iliac fossa. It was painful on pressure, and the abdominal parietes could be made to glide over it. From vaginal and rectal examination, it appeared certain that this tumour descended into the pelvic cavity as low down as to the recto-vaginal space, moulding itself to

the posterior surface and right side of the uterus, which it depressed to the left ; the os uteri, obeying the same impulse, was placed in contact with the pubis. Neither by the vaginal nor the rectal exploration, separately performed, could any fluctuation be recognised ; but when exploration was simultaneously performed through both canals, the fluctuation became evident. On passing urine the patient felt as if she were going to expel a foreign body per vulvam. The abdominal pain radiated to the loins and thighs, particularly to the right side, which was sometimes benumbed. Ipecacuanha, poultices, and injections per rectum and per vaginam, were prescribed.

Recamier made an incision through the posterior wall of the vagina, where the fluctuation was most evident, and this was immediately followed by the flow of a considerable quantity of red, viscous, inodorous fluid. The incision was enlarged, and on introducing the finger the parietes of the tumour were found to be thick, resisting, and fibro-cartilaginous in structure. The patient felt much relieved. Baths and injections were administered on the following days. After a few days the patient was better ; the pain and other symptoms diminished ; but the ingress of air into the cavity gave rise to a fœtid secretion. Methodical pressure was applied to the abdomen ; the last portion of the injection was ordered to be introduced very slowly, so that it might be retained, and the patient was placed so that the pelvis might be higher than the loins. These precautions were sufficient to deprive the secretion of its fœtid smell. It became daily more like pus ; the tumour diminished in size, and was no longer painful. Strength, appetite, and sleep returned. There was every reasonable hope of a speedy cure, when, on August 13th, ten days after the operation, there was a return of fever, and violent pain in the left side. 15th : By a vaginal exploration, a hard, painful tumour, about the size of a hen's egg, was found to the left of the uterus. This pressed the uterus to the right ; while the opened cyst, by the diminution of its size, no longer displaced it to the left. For several days it was feared that this second swelling would terminate in suppuration ; but by the employment of baths, poultices, and injections, it disappeared ; and on the

21st, instead of a large tumour, only a small swelling was found. Injections in the cyst were continued, so that the wound might not close too soon; but when the secretion had become less in quantity, and more like lymph than pus, these were discontinued, and the wound healed. On September 12th, thirty-nine days after the operation, the patient left the hospital, quite recovered, and without any fistulous opening.

This case shows the decided advantage to be obtained from simultaneous exploration per vaginam and per rectum. It was only by this method of examination that fluctuation could be detected, and the patient's life saved; for the same explorations, when separately performed, did not afford the necessary information. This Peri-uterine hematocele had no doubt existed for several months; and its presence was only detected when it became the seat of inflammation. It was supposed to be an abscess of the broad ligaments; but this error of diagnosis did not influence the treatment, as it was then considered urgent to evacuate the fluid, whether puriform or of whatever nature, so soon as fluctuation became manifest.

The following case also occurred in the practice of Recamier, and again shows the utility of the double-touch in correcting an erroneous diagnosis founded on vaginal and rectal explorations separately exercised.

CASE 2.—A female, aged thirty-two, having had three miscarriages, and six children, the youngest eight months old, had, ever since her last confinement, suffered pain in the left side of the abdomen, with constipation, and a frequent desire to pass urine, even when in the horizontal position. There was no difficulty in moving the left leg, no sickness, nor did the abdomen present any extraordinary tumefaction. Her face was pale, and bore the expression of suffering. There was pain in the left hypogastrium, which was increased by manual examination, a hard tumour being detected in the fundus of the pelvic cavity. In an examination by the vagina, nothing preternatural was found in the neck of the uterus, but it inclined to the right side, while to the left was found a hard, globular tumour, about the size of an egg. The examination by the rectum furnished the same evi-

dence, and the patient suffered from slight fever at night, followed by perspirations. The case was said to be one of phlegmonous congestion and incipient suppuration in the broad ligament. Leeches and tepid baths, poultices, and enemata were prescribed. A few days afterwards, the patient being better, another examination was made, but in this instance, by the vagina and by the rectum simultaneously, which had not been done previously. It then became evident that the womb was not to be felt in its right place; and that it had been diverted to the left side, thus simulating a tumour of the broad ligament. The patient recovered from this attack of pelvi-peritonitis, but the deflection of the womb remained, on account of the firm adhesions which bound it down, and for a long time walking was painful.

I took the minutes of the following case in Dr. Rayer's ward at La Charité, in Paris, and adduce it, to show, that if the double-touch had been performed, the tumour, without doubt, would have been detected, and the patient's life, in all probability, would have been saved.

CASE 3.—A woman, aged forty-five, had been long suffering from some undefined abdominal complaint before entering La Charité, on February 15th, 1848. The abdomen was uniformly enlarged, and tender when pressed; there was also retention of urine; and on introducing the catheter the instrument took a perpendicular direction against the pubes, and only a few ounces of urine were voided, though, on percussion, the bladder still sounded as if full. The male catheter was then substituted for the female, and Dr. Blanche, with some trouble, and by exercising a moderate degree of force, penetrated into a second portion of the bladder, and evacuated from two to three pints of urine, which operation was daily performed, with the same difficulties. All this was esteemed by Dr. Caseau to be the result of an ovarian tumour; in Professor Velpeau's opinion, it was caused by an uterine tumour; but Dr. Rayer prudently forbore giving any diagnosis. The patient lingered for several days with increased abdominal pain, fever, weakness, and then died. There was general peritonitis, with considerable effusion, the bladder was enlarged, and presented traces of chronic inflammation, and a few gangrenous spots; the uterus and ovaries were without adhesion.

To explain the peculiarity of the patient's symptoms, a globular tumour, about the size of a cocoa-nut, was found between the bladder and the rectum. The walls of the tumour were very thin, firm, and fibrous; it contained a yellow fluid of the colour and fluidity of ordinary urine. This tumour had pressed on the bladder against the pubes, and so divided it into two cavities, that on sounding the woman it was not difficult to penetrate into the smaller cavity, but it required great force and a longer instrument to enter the second portion. The woman had been carefully examined by some of the most eminent men in Paris, yet the explorations per rectum and per vaginam separately did not lead to the detection of the tumour, perhaps on account of its uniform elasticity; but had the double-touch been put in practice, the tumour would have been detected before the supervention of general peritonitis, and the patient's life might have been prolonged. I may remark, that if the patient had fallen into inexperienced hands, force might have been employed in the usual direction of the female urethra, the cyst would have been perforated, its contents evacuated, and looked upon as urine. One of two things would then have occurred—the inflammation of the cyst, as a consequence of the ingress of urine to its cavity, and ultimate death; or adhesive inflammation might have taken place, and the patient have been cured without the nature of her complaint being ascertained. A case of an ovarian cyst was cured by Professor Bennett, of Edinburgh, after the emptying of its contents through the bladder, and Mr. Curling has published another.

OCULAR EXAMINATION OF THE WOMB.

The practical turn of the Roman mind may to a certain extent explain the finding of a speculum-uteri amongst other surgical instruments at Herculaneum. Judging by the following extract from Morgagni's forty-sixth letter, some kind of ocular examination of the womb was occasionally made in the seventeenth century. Refuting Naboth's assertion that the structure of the os-uteri is as difficult to make out as the diseased state of the ovula themselves, Morgagni observes that "he ought to have known that every day skilful

surgeons investigate the state of the neck of the womb, when the patient is in the erect posture, and when the patient is placed in the posture which is necessary for the introduction of the *speculum uteri*, the orifice of the womb can be seen. I have even more than once seen this orifice, when the vagina was short, without using the speculum, but by means of an ivory or glass tube, of sufficient length and diameter to permit the free ingress of light." From which it may be inferred, that the speculum uteri was some old complicated machine, and that the glass tube resembled what is now called Fergusson's speculum, without its reflecting power. When the speculum was, as it were, discovered by Recamier, its novelty was not contested by Boyer, Chaussier, or Dupuytren, who, actuated by a true conservative spirit, at first opposed it. I shall refer the reader to Dr. Bennet's and other classic works for an account of all the specula that have been invented, as well as for other valuable information upon the subject. Each writer praises some particular instrument—Dr. Bennet prefers Jobert's bivalvular, Scanzoni, Fergusson's; Becquerel, one invented by Mdme. Boivin, consisting of three valves laterally articulated. All these different kinds are useful to those who see much of uterine practice. Jobert's bivalvular speculum is indispensable to well separate the lips of the os-uteri, so as to see as far as possible into the cervix; but a beginner will find himself lamentably at a loss to discover more than a fold of the vagina on first attempting to use this instrument, and for the majority of cases Coxeter's bivalvular is perhaps the best speculum. With this instrument, or Fergusson's, nothing is easier, when the womb is well placed, than to discover its orifice, and to fix the vaginal portion of the cervix between the valves of the instrument, but when the womb is anteverted or retroverted, as it often is in cases of long-protracted uterine disease, the practitioner will frequently find it most difficult to reach the os-uteri, and to place it so as to render it amenable to surgical applications.

Injectons, repose, and other treatment, often so improve the position of the womb as to permit the os-uteri to be brought in view, but this will be sometimes found extremely difficult. I almost always place the patient on her back,

because it incontestably affords the best view of the reproductive organs. I cannot understand the objections raised in this country against this mode of examination, for, by throwing a cloth over each lower limb, it is attended by less uncovering of the patient, and does not hurt her feelings more than lying on her side. In introducing the speculum it is well to press it, gently but firmly, against the rectum, so as to avoid a thick, sensitive, transversal fold of the vagina near the vulva, for should the speculum hitch upon this it may cause bleeding, and give unnecessary pain. In different cases, one mode of exploration will be more advantageous than another. Compared with the finger, the speculum is of little use to decide whether organic disease of the womb be inflammatory or cancerous, but in many inflammatory affections of the womb the finger only reports chronic inflammation, without informing one whether caustics are required to cure the patient; information which can only be acquired by the use of the speculum. It is not, however, a question of choice between several modes of investigation; we want them all, and have none to spare.

PART I.

PHYSIOLOGY AND DISEASES OF MENSTRUATION.

CHAPTER I.

NATURAL HISTORY OF MENSTRUATION.

“Cujusque morbi tanta est magnitudo, quantum a naturali statu recedit, quantum vero recedat is solus novit, qui naturalem abitum adamussim tenuerit.”—GALEN.

DEFINITION.—*Menstruation is an ovarian nisis, manifested by nervous symptoms, relieved by critical discharges, principally from the internal surface of the womb, and recurring according to a monthly type, during the reproductive period of the lifetime of woman.*

Besides experimental researches on the remote causes of menstruation, the subject may be studied like any other natural phenomenon. This has been partially done by numerous authors, and in a very satisfactory manner by my friend M. Brierre de Boismont. I have also devoted much time to this inquiry, and shall detail some of the results I have obtained in the following portion of this work. I shall first point out the law and rule of each of the phenomena of menstruation, and then follow out the deviations from the rule during the whole extent of that period of life which is bounded by the first and last menstruation, thus connecting physiology with pathology in accordance with the intricate union of the two in diseases of women; and although the utility of treating the subject in this systematic manner does not seem, as yet, to have struck other observers, the plan will be found replete with interesting and practical results.

The following table will show how each symptom of menstruation may be perverted, so as to assume the character of disease :

TABLE I.

SHOWING HOW THE SYMPTOMS OF MENSTRUATION, FROM HEALTHY,
BECOME DISEASED.

		Physiology of Menstruation.	Pathology of Menstruation.
Symptoms of Ovarian Naisus.	Ganglionic Symptoms.	A monthly type. Animal heat somewhat increased. Nutrition healthily stimulated. Slight flushes. Faintness at the pit of the stomach. Swelling and soreness of breasts.	A remittent type. Slight fever. Chlorosis. Frequent and burning flushes. Intense epigastralgia. Mammary neuralgia.
	Cerebral Symptoms.	Headache. Slight pseudo-narcotism. Nervous irritability.	Intense headache. Intense pseudo-narcotism. Hysteria and moral insanity.
	Spinal Symptoms.	Fidgets. Slight dorsal pains. Slight hypogastric pains. Numbness and slight loss of power of limbs.	Convulsive action. Intense dorsal pains. Intense bearing down pains. Local, or general paralytic affections.
	The Generative Surface.	A sanguineous flow.	Amenorrhœa. Menorrhagia. Deviated to other organs.
		A mucous flow.	Intermenstrual leucorrhœa. A mucous flow substituted for the sanguine.
	The Intestinal Surface.	Slight looseness of bowels.	Mucous, or bilious diarrhœa, substituted for the menstrual flow.
Critical Discharges from	The Cutaneous Surface.	General moisture.	Drenching sweats.
	The Urinary Surface.	Normal urine.	Diminution of saline component as in the water of hysterical patients. Great increase of phosphates and lithates.

Before, however, beginning this inquiry, I must consider the duration of the menstrual function, of which I have defined the healthy paroxysms; and as this duration is comprised between the first and last menstruation, let us seek for the dates of these two epochs.

The period of first menstruation is alike interesting to

the medical man and to the statesman; for as the fecundity of woman dates from that epoch, its knowledge is an indispensable element of many problems in medicine, and in the science of population; and although it may seem that the precise determination of this epoch has no practical bearings, it will soon be discovered, that a knowledge of its various dates, in different experiments and circumstances, not only throws considerable light on the nature and intensity of the powers which advance or retard puberty, but indicates the causes most likely to disturb menstruation, and to produce diseases of women. It may even be affirmed, that races, in which menstruation habitually occurs at an early period of life, are effete, emasculate, and doomed to be conquered; as of individuals, so of nations, it may be said, "Citius pubescunt, citius senescant."

Menstrual Modifiers.

The causes which modify the period of first menstruation may be divided into those which are predisposing and determining. The predisposing causes may be divided into those which are intrinsic, and those which are extrinsic.

Intrinsic Causes of Menstruation.

By intrinsic causes I mean those which are inseparably inherent in the female constitution—

1st. The parents from whom she inherits physiological as well as pathological constitutional peculiarities.

2nd. The race or stock from which she proceeds.

3rd. The national customs, from the dominion of which neither herself nor her family can ever obtain complete emancipation.

I. FAMILY.—How far does the period of the first appearance of menstruation depend upon the period at which that function first appeared in the mother? If the lineaments of the face and the external form of the body may be transmitted, it is reasonable to suppose that the structure of the internal organs may also be hereditary, and that therefore peculiarities of functions may be inherited as well as peculiarities of feature. Morgagni cites a case in which men-

struation in both mother and daughter only appeared several years after marriage. Negrier has noted several instances of girls menstruating at the same age as their mothers. Tissot mentions three sisters, in whom cessation came on at the thirty-sixth year, the period at which also their mother had ceased to menstruate. Gendrin knew a family in which all the girls through three successive generations were afflicted with menorrhagia except one daughter, who was subject to frequent epistaxis, which only ceased two years after menstruation.

Several instances of hereditary menstruation have come under my observation. Thus : Catherine H. first menstruated between fifteen and sixteen ; so did her four daughters. Mary R. first menstruated between thirteen and fourteen ; so did her daughter and her granddaughter. Jane R. ceased to menstruate at thirty-five, her mother at thirty-six, and her maternal grandmother at thirty-five. Generally speaking, however, there is seldom any coincidence between the dates of the first and of the last appearance of menstruation in different members of the same family. A healthy couple, in good circumstances, living at Dorking, have three daughters. The mother first menstruated at ten, but none of her daughters have yet done so, although their ages are nineteen, twenty, and twenty-eight. My patient is twenty, chlorotic, and has pelvic pains about once a month ; her sisters are in service, and often return home invalided.

I agree with Marc Despine, B. de Boismont, and Dusourd, that a delicacy of constitution retards the appearance of menstruation, and that it is, on the contrary, advanced in those in whom the nervous temperament strongly predominates. It may be possible to go one step further, since I am often able to guess rightly that, in such or such persons, menstruation occurred earlier than in others, and that it makes its appearance every three weeks instead of four. It may, however, be difficult to describe the characteristics of this peculiar appearance. A spare habit of body, dark complexion, lustrous eyes, at all times darkly circled, great nervous irritability. Such are the external characteristics of a temperament which deserves the name of ovarian temperament, as much as a constitution in which the biliary apparatus is predominant merits that of a bilious

temperament. Women who present these ovarian characteristics menstruate earlier than others, and are most liable to derangements of the catamenial function, which frequently assumes a morbid type, appearing every two or three weeks. In such women connexion often gives little or no gratification, and, on the contrary, is accompanied by strange symptoms of prostration of nervous energy, accompanied by convulsions or insensibility defying classification, while headache and debility are experienced on the following day. Physiologists, in accordance with popular prejudice, ascribe to all women who offer the characteristics of the ovarian temperament, great warmth of passion, but this is far too general, inasmuch as the ovarian temperament often exists without any. The ardent temperament is not indicated by conformation of body or its coloration, and with similar conformation of the sexual organs, women differ from each other as the equator from the pole. The restless, bashful eye, and changing complexion, in presence of a person of the opposite sex, and a nervous restlessness of body, ever on the move, turning and twisting on sofa or chair, are the best indications of warmth of feeling. The sense of sexual pleasure, like all other senses, depends upon the cerebro-spinal nerves, and upon the healthy development of the clitoridian nerves, which may be imperfect while ovarian activity is intense. The fact of the sense of sexual pleasure being in the clitoridian nerves is confirmed by my having three times noticed a rudimentary clitoris in married women in whom intercourse was without orgasm. Roubaud makes the same remark. I have twice seen an unusual development of the clitoris to have been the result or cause of masturbation. Nymphomania has been cured by the excision of the clitoris and nymphæ, an operation which has been successful in the hands of Levret, Antoine Dubois, Richerand, and Marjolin, but in an exceptional case, occurring in the practice of Dr. Lefort (*Gaz. des Hop.*, 1852) the cicatrix took upon itself the function of the clitoris, and the unfortunate patient was not cured of her propensity. On the other hand, women have sunk into the deepest depths of lust, in whom the clitoris presented nothing unusual, and Parent Duchatelet mentions three prostitutes, remarkable for an enormous development of

the clitoris ; in one it was three inches long, the woman had no breasts, had a rudimentary uterus, and had never menstruated. This woman had not the slightest sexual inclination ; nor had the other two, whose breasts were fully developed, and who had regularly menstruated. Sexual desires relate to the cerebro-spinal nerves, whereas the ovary is immediately dependent upon the ganglionic nerves ; it is an organ of vegetative life, it produces life germs, but is not an organ of sense. Of this hereafter ; suffice it now to say, that in some women it has an undue action, and tyrannizes over the system through life.

II. RACE.—All differences in the period of first menstruation have been ascribed to the agency of heat or cold, but it is necessary to ascertain whether the advancement or retardation of the faculty of conception does not depend upon certain original peculiarities of those races which inhabit hot or cold countries. The late Mr. Walker's remarks upon this subject are too interesting to be omitted, although many of his assertions require confirmation. "The early appearance of first menstruation," says Mr. Walker, *On Intermarriage*, p. 6, "is remarkable in the Mongolic or north-eastern broad-faced variety. Not only in China and Japan, but even in countries much colder than our own, does puberty commence in the female sex much earlier than with us. A French writer asserts that a Kalmuck or a Siberian woman of the Mongolian race is marriageable at the age of thirteen, even in a climate as cold as that of Sweden, whilst a Swedish female is scarcely so at fifteen or sixteen ; that still further north, and even on the confines of the Icy Sea, the Samœides are nubile at eleven, and are frequently mothers at twelve ; that the women of Lapland begin to evince maturity at twelve, and that the same appears to be the case with all the races of the polar regions—as the Ostiaks, the Yakoutes, the Kamschatdales, and even the American Esquimaux. This precocity has, indeed, been assigned to other causes than that to which I have ascribed it. Virey imagines that the early arrival at puberty amongst Mongolic nations may arise partly from the smallness of their stature, but in a great measure from the nature of their fish diet, which is supposed to be of a stimulating and aphrodisiac quality, and from dwelling continually in subterraneous places, subject to the suffocating

heat produced by the vapour of water poured upon hot stones, which is the most likely cause.

“The inadequacy of these causes, which apply but to few of the Mongolic tribes, is evident to every observer of nature. But no one can notice the large vital system of the north-eastern people without discovering a sufficient cause for this precocity in the vast development of that system. In all the sketches of women of the Mongolic variety which have been furnished by our recent voyagers, the trunk, which contains the principal organs of that class, is large, the abdomen wide and prominent, the mammæ extensive, and their habits as to food correspond. These natural organic causes apply, moreover, to all the women of the Mongolic variety, whether they inhabit cold, or temperate, or warm climates; and they can alone account for the precocity of all. It is a miserable physiology which, finding an event common to a whole race, must seek, like this of Virey, a different cause for the same event, in every different section of that race.”

Professor Webb, *Pathologica Indica*, Part II., p. 261, gives a full account of his experience of the period of menstruation in *British* born children brought up in the Calcutta government school. He found sixteen to be the average, which is strongly confirmative of the influence of race, despite that of climate. This inquiry might easily be carried out in some countries, particularly in America, where the European, the African, and the native or copper-coloured race live under the same climate.

It has been stated that Jewesses are very precocious, and their Eastern origin was made accountable for the fact, but in dispensary practice I have been struck by the number of Jewesses in whom menstruation was delayed to the seventeenth, eighteenth, and twentieth year. Thus, Esther D. first menstruated between eighteen and nineteen; her four daughters at about the same time. Her sister, between seventeen and eighteen. Her daughter was married at nineteen, and only menstruated after marriage. A sister-in-law of Esther D. first menstruated between eighteen and nineteen, and her three daughters about the same age.

Calculating from wider experience, Raciborski, who practised at Warsaw, affirms that menstruation occurs there earlier in Jewish women than in those of the Slavonic race. He scarcely found 1 per cent. of Slavonic women in whom

menstruation first occurred at 13, while this was the case in 12 per cent. of Jewesses.

The question of race might easily be solved by the practitioners belonging to the Hebrew creed; but whether from the pressure of engagements, or from other causes, it is difficult to obtain any information from them.

III. NATIONAL CUSTOMS.—In India, for instance, dishonour is attached to the parents of a girl who is not married when extremely young. It is, therefore, the custom to affiance children of seven, eight, or nine years of age. They then reside with the family of their intended husband, and connexion generally takes place long before it has received the sanction of a religious ceremony. The precocious use of matrimonial stimulus is, no doubt, calculated to advance the period of first menstruation, and it is to the influence of this perverse custom, strengthened by hereditary transmission of what was habitual in the parent, that Mr. Robertson ascribes the incontestably early menstruation of Hindoo women; but this view is too exclusive when we remember that we are told by Colonel Parry and other travellers, “that the beasts have more modesty in them than the Esquimaux, whose licentiousness is only equalled by that of the population of Hindustan.” Nevertheless, their mean age of menstruation is sixteen, if not later, instead of twelve, as in India. Besides, if the practice of early connexion brought on the early menstruation of Indian women, how is it that menstruation is retarded beyond the average of temperate climates in Russia, where for centuries early marriages have been customary, a national custom which the last emperors have sought to discountenance by repeated enactments?

EXTRINSIC CAUSES.

By extrinsic causes I mean those which are external to the female, and of which she is more or less independent, as :

I. Temperature.

II. Habitation.

III. Civilization.

I. TEMPERATURE.—It has always been admitted that a high or low temperature acts on the generative process of

TABLE II.

TABLE OF THE PERIODS OF FIRST MENSTRUATION OF 12,321 WOMEN, IN HOT, TEMPERATE, AND COLD CLIMATES.
GRAND MEAN OF ALL COUNTRIES, 14.84.

YEARS.	HOT CLIMATES. Number of Observations, 666. Mean Age, 13.19.				TEMPERATE CLIMATES. Number of Observations, 7521. Mean Age, 14.91.												COLD CLIMATES. Number of Observations, 4134. Mean Age, 16.41.				YEARS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	Race.	Country.	Mean Temperature of Country.*		Hindoo-Germanic.	Celtic-Hindoo-Romano-Germanic.				Gothic-Hindoo-Germanic.				Gothic-Hindoo-Germanic.		Esqui-maux.	Race.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			Win- ter.	Sum- mer.		Annual.	Win- ter.	Sum- mer.	Annual.	Win- ter.	Sum- mer.	Annual.	Win- ter.	Sum- mer.	Annual.			Win- ter.	Sum- mer.	Annual.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
5 to 6</

* The mean annual temperatures, indicated in degrees of Fahrenheit's thermometer, are reduced from Mahmann's elaborate table of mean temperatures, inserted in Humboldt's work on Central Asia.

+ These averages are deduced from so small a number of observations that they cannot weigh against the contrary statements of travellers.

women as it does on plants, hastening or arresting the budding forth of the germ which separates from the female to prolong the continuance of the species. In this instance the current notion is true.

Table II. shows, that while the mean age of first menstruation is,

In Calcutta	12 years 6 months
In London	14 „ 9 „
It is in Copenhagen . . .	16 „ 10 „

Mr. Robertson, in his valuable contributions upon the subject of menstruation, denies the influence of heat, and relies on the reports of missionaries in Jamaica and Barbadoes, from which it appears that the negresses menstruate about the same time as the inhabitants of our own country, but I think the observations he was able to procure—eighty-six—were not sufficiently numerous to warrant his conclusions. Dr. Marc Despine remarks (*Archives Gén. de Méd.*, Série II., Tom. IX.), “The evidence obtained from missionaries by Mr. Robertson has no more value than the opinion of other non-professional travellers, for he did not give the missionaries *questions*, to which the answers of the women themselves might be added, but merely asked these gentlemen their opinion upon the subject.”

Louget observes that Mr. Robertson has falsely interpreted inexact documents, and Mr. G. Bedford says that Mr. Robertson has singularly failed in seeking to prove that climate has no effect on the first appearance of menstruation.

Mr. Murray, colonial surgeon at Trinidad, informed me that “negroes seldom know their ages, and that, therefore, an accurate list is almost impossible.” I must, then, have other testimony before throwing aside the assertions of numerous travellers, that negresses generally menstruate between the tenth and the eleventh year, a statement confirmed by Mr. Robert Clarke, who was for 20 years colonial surgeon at Sierra Leone. The late Dr. Ross, long resident in Madeira, told me that the mean date of first menstruation of 240 native women was 14 years and 8 months, and although in Pagan and Christian Rome, girls have been

declared marriageable at 12; still Zucchias, who practised there, declares that scarcely one-twelfth of the Roman girls had menstruated at 12, and many not at 14, although he had known some to be regular in their ninth year. As Mr. Robertson attaches so much importance to 21 cases collected by unprofessional hands, it is singular he did not take account of the list of 3840 cases of first menstruation, collected by Drs. Ravn and Levy, under the auspices of the Medico-Chirurgical Society of Copenhagen. This list shows, that in Denmark, first menstruation generally takes place at sixteen years nine months, and this offered so striking a contrast to the period of first menstruation in India, which is thirteen, that I drew Mr. Robertson's attention to it. It is affirmed by Raciborski, on the testimony of Dr. Wretholm, that women living in the mountainous districts of Lapland seldom menstruate before 18, and Dr. McDiarmid, surgeon to Sir J. Ross's expedition to the Arctic Regions, says that in the Esquimaux, menstruation is often delayed till the 23rd year, and then only appears, as a mere show, during the summer months.

To solve the question, it would be necessary to compare the mean age of first menstruation in the negress inhabiting Africa with that of her sable offspring transplanted into other climes. A medical man of the Hebrew persuasion might also settle the point with great facility, as his race is unalloyed by other blood, and yet placed under every variety of climatorial influence. I do not, however, think such inquiries necessary to establish the influence of heat upon menstruation, but consider it sufficiently proved by Table II., where the mean age of first menstruation in hot climates is thirteen, and in cold climates sixteen and six months.

On inquiring at what season 388 women first menstruated, I obtained the following results:—

In summer	197
In winter	43
In spring	32
In autumn	16
The date was unknown or uncertain in	100

The quantity of the flow was said to be habitually increased in winter by three per cent. of women, and in summer by five per cent., but for the most part winter and summer had no such effect. These results would be interesting even if isolated, but much more so when coupled with those of Mr. Quetelet's extensive statistical inquiries, who found that conception most frequently takes place in May, and least so in October; and Drs. Lastrì and Ferrario, from an examination of the books at the Baptistery of Florence, found that within the four hundred years ending in 1845, conception was most frequent during the months of April, May, and June, and least so in September. Such facts give some support to the experience of P. Ægenita Stoll, admitted as true by Dr. Laycock,—that hysteria is most frequent in spring; and they confirm the belief of the Greek philosophers and modern poets, that the sexual feeling is most ardent in spring, and least so in autumn; or, in other words, that man does not escape the law common to all animated beings, "that the intensity of procreative power is, to a certain extent, regulated by heat." Like Dr. Dusourd, I have found chlorosis liable to relapse most frequently in spring, a fact interesting, if, as I believe, chlorosis depends upon defective ovarian influence.

II. HABITATION.—The influence of a town or country habitation has been shown by B. de Boismont. Thus he found that

	Yrs. Mon.	
The mean age of first menstruation in		
the country was	14	10
In Paris it was	14	6

Pursuing the inquiry still further, he ascertained that there was a difference in the period of first menstruation in women inhabiting small towns, or the capital of the country, Paris.

	Yrs. Mon.	
Women in small towns	14	9
Women in the capital, Paris	14	6

Dr. Ravn reporting on the statistical information derived from medical men practising in Denmark, states the average date of first menstruation to be—

	Yrs.	Mon.
In women born in the country . . .	16	5
„ „ commercial towns . . .	15	4
„ „ Copenhagen . . .	15	7

The influence of altitude above the level of the sea may have some effect upon the first appearance of menstruation, since Saucerotte found that women living high in the Vosges mountains were subject to floodings and miscarriages, which abated, and did not occur on their removing to the plains. Localities, by their exposure to certain winds, may likewise have some effect; and the remark of Hippocrates was probably true, that virgins become nubile later in towns exposed to cold winds, and that Scythian women not only menstruated less frequently, but less profusely also—of which last assertion I shall hereafter show the correctness.

III. CIVILIZATION renders Russian ladies as nervous as the Creoles, and has great influence in advancing first menstruation. M. Brierre de Boismont has demonstrated this influence in a limited number of cases, 53, and found that while the

Mean age of first menstruation was—

	Yrs.	Mon.	
In the noble and the rich . . .	13	8	in 53 women
In the well-to-do working classes	14	5	in 135 „
In the poor	14	10	in 171 „

The statistical inquiry of Denmark has furnished Dr. Ravn with the following results:

The average date of first menstruation was—

	Yrs.	Mon.
In the higher class in towns	14	3
In the middle class	15	5 $\frac{1}{2}$
In the lower class	16	5 $\frac{1}{4}$

In the country, or farming population, the average date of first menstruation was—

	Yrs.	Mon.
In the rich	14	0
In the daughters of domestic servants . . .	16	5
In the daughters of the peasantry . . .	16	8

The results I have obtained in London are very similar to those obtained in Paris by M. Brierre de Boismont, and by my friend Dr. Ravn in Copenhagen.

No. of women.	Social condition.	Mean age of first menstruation.
67	The opulent class	13·45
775	The well-to-do working class . . .	14·3

Thus three different observers, two in a temperate and one in a cold climate, arrive at the same results—the strong influence of civilization on the first manifestations of puberty. Civilization, by its numerous modificatory influences, by its constant appeals to sexual appetites, begets the nervous temperament to which may be ascribed the earlier menstruation, and the more disturbed performance of this important function; whereas, in the lower classes, particularly in the peasantry, menstruation is less anomalous and diseased, as already noticed by Stahl and Baglivi. It is then useless to disguise that the educated classes suffer from the effects which ever follow a very high state of civilization; for as a tree first takes root, then throws off its strength in unlimited florification, so man, at first sober and chaste, as civilization advances, seeks in every way to extend his power of sexual gratification. The literature of Rome and of Greece, the *Cabinetto segreto* of the Museo Borbornico at Naples, to which no woman can be admitted, shows to what a pitch this was carried in the most civilized periods of polished Greece and Rome; and if, as medical men, we are not aware of this evil tendency of our own age, how can we withstand one of the principal causes of the frequency of diseases of women? Every practitioner must have met with many a lady whose abuse of the fashionable pleasures of society had induced extreme nervous irritability, with irregular and profuse menstruation, often recurring every fourteen or twenty-one days, and that these are the results of this fashionable existence, is evident from the fact that the opposite condition of the monthly function is induced by a contrary mode of living. Monastic life—we speak of the rule, not of its exceptional abuses—embraces the mortification of the body by abstinence from all sensual pleasures, and accustoms the mind to

accept the nursing of the sick and the educating of children as a religious duty. Drs. Pidoux and B. de Boismont say—that after the first year of monastic life, during which nuns are subject to dysmenorrhœa, the flow becomes painless, seldom lasts more than twenty-four hours, and its regularity seems to partake of that by which all their actions are governed. The complexion becomes chlorotic, and the breasts atrophied. The late Dr. Ferrus assured me that menstruation was always either irregular or suppressed in female prisoners. Such are the two extremes between which it is easy to shape a middle course.

DETERMINING CAUSES OF FIRST MENSTRUATION.—Besides the predisposing causes which advance or retard first menstruation, there are evidently determining causes. As I am not writing a work on physiology, I cannot fully investigate, though it be necessary to enunciate these, since many form likewise the determining causes of diseases of women. Some of these causes are mechanical: such as blows, falls, over-exertion in walking, in jumping or riding, exposure to intense heat in kitchens or washhouses. Others act more upon the nervous system—such as sudden fright; others, again, act by stimulating the external organs of generation—such as marriage, cutaneous eruptions of the pudenda, vulvitis, and vaginitis. Many of these causes frequently come into action, so that menstruation appears earlier than nature intended, and then it usually stops for about a year. This is what I have found to be the average date of the regular establishment of the menstrual flow after its first appearance. It may be also given as a rule, that when menstruation first appears late in life, it continues regular.

In my work on the *Elements of Health and Principles of Female Hygiène*, I have drawn attention to the ill effects of the flow occurring without girls being in any way prepared for its appearance, and stated that in twenty-five per cent. of cases, young women were unprepared for its appearance; that thirteen out of the twenty-five were much frightened, screamed, or went into hysterical fits; that six out of the thirteen thought themselves wounded, and washed with cold water. Of those frightened the flow was checked in seven instances, was never restored in three, and the general health

of all was seriously impaired. Of those who washed with cold water, two succeeded in effectually suppressing the flow, which only reappeared after several years, and then at irregular intervals, and was never healthily established. Too much stress cannot, therefore, be laid on the precept, "not to let young persons be taken unawares."

CASE 4.—Elizabeth F. The catamenia first appeared at thirteen. Taken unawares, she washed with cold water, and stopped the flow. This was immediately followed by great giddiness and headaches. Scarcely a day passed without her bleeding at the nose. At night she would sometimes bleed from both nose and ears to such an extent as to wet through two or three pocket-handkerchiefs. For two years she remained in this state, and menstruation was brought back by repeated cold shower-baths on the head and upper part of the body, while the patient stood up to her hips in very hot water. Menstruation has since always continued irregular. Thus, for two years, the patient had suffered severely from uterine symptoms, and had been given up by several practitioners. The neck of the womb was swollen to three times its usual size, and *ulcerated* on its internal surface. She was cured after being under treatment for a year.

As every rule has its exceptions, so there will be some to that of first menstruation not generally occurring in England until the age of fourteen. To most of the recorded cases of its earlier appearance it may be objected that the hemorrhage from the genital organs was not accompanied by the characteristic prodromata of menstruation, but this was sometimes the case. Of menstruation in infancy the following is the best example that has come to my knowledge, but many others are recorded by Dr. Taylor: *Med. Jurisprudence*, 4th ed. p. 365.

CASE 5.—Desirée Clementine A., of St. Vincent la Rivière—Eure—a strong child, aged two years and ten months. She is plump, and of a lymphatico-sanguine temperament; the breasts are developed, but the sexual organs are not more so than is usual to a child of that age. For the first few weeks of her life she was delicate, but at four months she became strong, and continued so until the period named, when, *after such symptoms as women generally feel before menstruating, a*

sanguine flow came from the vagina. This flow was trifling the first day, more the second, still more the third, and on the fourth it disappeared. The village matrons said that the quantity lost was equivalent to that of a full-grown woman abundantly menstruating. The period passed, and the little girl was like any other, when the following month she became cross, feverish, sleepless, lost her appetite, and complained of pains in the belly. When these prodromata had lasted twenty-four hours the flow appeared, and was repeated every month in a similar way for four months. During the whole time of the prodromata and the duration of menstruation there was headache, subsultus tendinum, and hypogastric tension, which symptoms were relieved by emollient applications to the belly. Walking was painful to her, for the labia majora were excoriated by the secretion; but when it was over the child was as well as ever. Having thus lasted several months, the secretion, which then seemed permanently established, began to vary. It came less regularly, at longer intervals, was less sanguineous, with more and more leucorrhœa, until this became the sole discharge; it gradually diminished, and disappeared. At first the child did not seem to suffer from its arrest, but afterwards she again experienced the symptoms of menstruation, which might reappear, or the pains might be the result of uterine congestion, as supposed by Dr. Marage, who has published the case in the *Union Méd.*, Dec. 19, 1850.

Tardy menstruation, the *menstruatio serotina* of older writers, has been traced to atrophied ovaries in several instances by Negrier, and is also sometimes caused by an imperfectly developed womb. Scanzoni says, that tardy menstruation is frequently caused by interstitial exudation of plasma, in an inflamed mucous membrane, lining the body of the womb, but internal metritis is very uncommon in young women, and generally renders menstruation unusually abundant. Experience teaches me, that tardy menstruation is most often caused by constitutional debility, for it frequently coincides with chlorosis and with scrofula.

Impregnation may take place in the absence of the menstrual flow.

Brassavole speaks of several peasant women, in good

health, who had children without ever having menstruated; Laurent Joubert relates that a woman of Toulouse had eighteen children, although she never menstruated. Trencavel met with a robust woman, who was confined without accident, and had never menstruated; Marcellus Donatus was acquainted with one who had two children without ever having menstruated; Stalpart Vanderviel mentions, that, at the Hague, the wife of a tailor bore him a child every year without ever having menstruated, and Foderé met with several women who had had children without ever having menstruated, and others, in whom menstruation had appeared once only, at the usual time.

With regard to the reappearance of the menstrual function during lactation, as a general rule, I find that lactation checks the menstrual flow up to the tenth month. Dr. Meigs, practising in Philadelphia, says, "that he expects his patients to become unwell at the seventh month of lactation;" but more frequently than is generally believed, the periodical flow coincides with the secretion of milk as early as the second or third month of lactation, and this in perfectly healthy women; and I am in a great measure able to confirm the assertion of our own excellent observer, Friend, who says, that "menstruation often continues regularly from the very beginning of lactation, *in lactantibus gracile corpore proeditis.*"

DATE OF LAST MENSTRUATION.

As the cessation of menstruation is the only means by which one can in general affirm that fecundity is improbable, the question is of some interest in a medico-legal point of view, and particularly interesting to those whose expectancies depend upon the possibility or the improbability of a woman being fruitful. In my second edition of *The Change of Life*, to which work I must refer the reader for a more elaborate account of this period of life, will be found a table in which I have placed, side by side, the results obtained in Paris by B. de Boismont, and in London by Dr. Guy and myself. It will be seen that although the date of cessation varies from the 21st to the 61st year, yet it may generally be expected from 40 to 50. Thus, out of B. de Boismont's 181

cases, in 114, cessation took place between 40 and 50 inclusively; and in 330 of my 501 cases, cessation occurred during the same decennial period.

Such is the law, but cessation may take place long after or before the usual time. The possible limits of the menstrual function may be gathered from well-authenticated cases of late menstruation and late fecundity, and from tables of fecundity and mortality. That the possibility of fecundity can, in general, be estimated by the persistence of menstruation is confirmed by many trustworthy observers, living or dead. Thus, Mr. Robertson, of Manchester, observes:—"I am able to speak confidently concerning 3 women who had children at advanced ages,—one in her 50th year, another in her 51st, and the third in her 53rd year. In each of these instances the menstrua continued up to the period of conception." My colleague, Mr. Davies, confined a lady of her 13th child at the age of 53, after which there was no menstrual flow; and Dr. Davies communicated to the *Medical Gazette*, Vol. XXXIX., the case of a woman who was 55 when her last child was born, and who menstruated up to conception. Twice have I known the menstrual flow to continue its regular appearance up to the 61st year, in ladies of a remarkably strong constitution: and Mr. Robertson cites a case where menstruation ceased for twelve months about the 50th year, when it again became regular and continued so until the 70th.

Lamotte relates the case of a woman who had 32 children, and menstruated quite regularly up to her 62nd year. Auber attended two women, one 68 and the other 80, who for the last few years had again menstruated. The flow came regularly, lasted three or four days, and during that time they were more nervous than usual, the organs of sensation being unusually dull of apprehension. Saxonia states that a nun, in whom the menstrual flow ceased at the usual time, experienced its return when her 100th year was attained, and it continued regular until her death, three years after. Rush mentions the case of a woman who was confined for the last time in her 60th year, menstruated until her 80th, and died in her 100th year.

The medical advisers to insurance offices should know that

menstruation may cease at the age of 45, and then reappear, continuing regularly for a few months or for years with the chance of fecundity. A case of this kind has occurred in my own practice. The lady ceased at 45, menstruation was absent for two years, then returned with regularity, and was followed by pregnancy at 50. Cornelia was confined of Valerius Saturnius in her 62nd year. Cederschjald met with an instance of a woman bearing a child at 53, and menstruation still continued. Haller records two cases in which women at 63 and 70 respectively bore children. My old friend Capuron cites the case of a lady, who after the menstrual flow had been absent for several years, saw it return at 65. Three months after, she miscarried, the fœtus being well formed. Meissner states that a woman who first menstruated at 20, bore her first child at 47, and the last of 7 other children at 60. Menstruation ceased and reappeared at 75, continuing until 98, then stopped for 5 years, again to return at the advanced age of 104. In 1812 she was still alive.

I have mentioned other cases, which are not instances of irregular flooding, but of the menstrual flow, occurring regularly with its attendant symptoms, and often followed by pregnancy. These facts contradict the opinion of those who assert that when the menstrual flow has once fairly ceased between 40 and 50, any blood that may afterwards flow from the womb must depend upon some undetected ulceration. I have known it to be so, and one ought not to conclude otherwise without a careful examination. I have known the return of a periodical discharge to depend on a vascular polypus in the neck of the womb. Scanzoni cites a similar case, and another in which menstruation ceased at 48, to reappear at 52, every three or four weeks until 64, when the patient died. The ovaries were found atrophied; the womb was voluminous, softened, and its lining membrane was injected, and a blood clot of recent formation filled the uterine cavity. In many of the cases of protracted menstruation, I could find nothing amiss in the uterine organs.

What are the causes of protracted menstruation? Many of the preceding cases enable me to affirm that the ovaries may become paralysed before the time usually fixed for their

atrophy, and that they may resume their wonted energy by a spontaneous effort, by the shock of sudden grief, or through some impulse given to the ganglionic system, by fevers and visceral diseases. At the same time it is obvious, that a sanguineous discharge from the womb must not be accounted menstrual, unless it be repeated regularly; for in advanced age fever may cause uterine hæmorrhage, as it may an epistaxis. For instance, Gardanne gives a case, wherein an abundant menstrual flow is said to have come, for the last time, after six months' stoppage, in a woman 49 years of age, during a bilious fever, in which emeto-cathartics were given. This might have been uterine hæmorrhage: so might it have been in Bohnius' case, where the ingress of fever is stated to have brought on a return of menstruation in a woman 80 years old. The same remark applies to a statement lately made by Mr. Wood, of the return of the menstrual flow in a lady aged 69, in consequence of the death of a favourite son; and at 60, in her sister, in consequence of a fright. These cases are open to doubt, unless the critical discharge returns regularly for a certain time, as in the following instance published by Mr. A. Brown—*London Medical Gazette*, Vol. XXI.—A woman had not menstruated since her 42nd year, when, after suffering seven months from swelling of the liver and pains in the loins, she was critically relieved in her 56th year, by the sudden appearance of menstruation, which was repeated ten times, and perfectly re-established her health. Protracted menstruation is, however, more frequently caused by affections of the womb than of any other organ. Fibrous tumours of the womb often retard the date of cessation. Uterine polypi have the same effect, and in some of Dupuytren's cases of uterine polypi the menstrual flow lasted until the 49th or 56th year; but the sanguineous discharge should not be considered menstrual unless it occurs periodically, or with periodical paroxysms. I have sometimes found that ulceration of the neck of the womb coincides with an unusually protracted menstrual flow, and as the earlier observers had not the means of recognising this disease, their cases of late cessation are, to a certain extent, invalidated.

With Dr. Dusourd, I consider the ovarian activity to be

commensurate with constitutional vigour, inasmuch as all those in whom the menstrual flow was unusually prolonged, were remarkable for their strength and good health, and for the size of the ovaries, according to Negrier's assertion, which is borne out by the case of a lady in whom menstruation only became regular at the last years of her life, and who died at seventy-two. Drs. Bouvier and B. de Boismont found the ovaries and the whole of the generative system in the state usual to girls of fifteen to eighteen years of age, instead of being shrivelled and atrophied as is the case in women advanced in life. Neither should the philosopher lose sight of the connexion between the unusual prolongation of ovarian life and remarkable longevity in several of the preceding cases; and I believe that life is longest in those women in whom puberty is retarded, unless by disease, as it is proved to be the longest in cold countries, where the average date of first menstruation is delayed. Alexander von Humboldt has arrived at the same opinion, founding it upon extensive and comparative study of the numerous races which inhabit South America. When the ovarian nixus is healthily manifested, it indicates a corresponding healthy activity of the other functions of vegetative life; and when it is unusually prolonged, it implies a corresponding power of endurance of vegetative life, on which depends longevity. Another means of judging whether cessation will be retarded is the circumstance of menstruation having first appeared later than usual, notwithstanding the assertions of Burdach and Mende. Now, in some of the cases of very prolonged menstrual flow, it first appeared as late as 20 and 22; but to ascertain the truth, I compared 33 women, who had first menstruated from 8 to 11, with 37 women, in whom menstruation had been retarded from the 18th to the 22nd year; and while in the first set of cases, the average date of cessation was 44, it was 46 in the second set of cases.

I now come to the causes of early cessation, or premature ovarian paralysis, for the reproductive force with which the ovaries are endowed may be extinguished long before the average date of 45. On careful consideration of 49 cases, wherein menstruation ceased suddenly from the 27th and 39th year inclusively, I was unable to detect anything pecu-

liar to their constitution with the exception of 8, whose strength was below the average. None of the 49 had married too early or were addicted to prostitution, which have been erroneously given as causes of early cessation by Meissner. They were not unusually subject to profuse menstruation, as asserted by Gardanne. They were not more than usually affected with disease of the reproductive organs, as stated by Meissner, neither did the diminished extent of the menstrual function indicate less reproductive power, for the average number of children was a little more than 3 in 26 out of the 49 women who were married. Early cessation is said to be generally caused by atrophy of the womb and ovaries by Negrier and Scanzoni. "Si non è vero, è ben trovato."

If women of the same family sometimes cease to menstruate at the same age, it may be merely a coincidence. With regard to the influence of race, climate, country or town life, and civilization, upon the cessation of menstruation, there are the contradictory assertions of those who speculate upon too small a number of facts.

Out of my 49 cases, the menstrual flow was suppressed from the 27th to the 39th year in 27, and I could account for it by parturition, and lactation, miscarriage, a fall on the sacrum, getting wet through, by being bled from the arm at a menstrual period, by violent purging, by cholera, rheumatic fever, and by fright. In my work on *The Change of Life*, will be found cases which show that it is often difficult to distinguish the changes of life from chlorosis, uterine inflammation, uterine polypi, fibrous tumours, uterine hydatids, cancer, and even pregnancy.

The dodging-time, or that period which is comprised between the first appearance of menstrual irregularities and cessation, is of very variable duration, but in most women extends over one to three years; the change of life taking place generally by a gradual diminution of the menstrual flow, though in some, it stops suddenly by one or more floodings, or by an alternately copious and scanty flow at very irregular periods. With regard to its quality during this period, it is said to be sometimes blacker than usual, more clotty or sero-sanguinolent, or to be like cinderdust

and water, or dirty green water, as in the latter part of the lochial discharge. As, during the dodging-time, the redundant blood cannot, in general, be used or changed into fat, it is expelled, and constitutes various hæmorrhages, or else it produces congestions or discharges, the latter relieving the former. As, for thirty-two years, it had been habitual for woman to lose about 3 oz. of blood every month, so it would have been indeed singular, if there did not exist some well-continued compensating discharges acting as wastegates to protect the system, until health could be permanently re-established by striking new balances in the allotment of blood to the various parts. The compensating agencies may consist of a larger consumption of carbon by the lungs, an increase of urinary deposits, increased perspiration, more abundant mucous flows, and hæmorrhages from various organs. Some of these compensating actions proceed permanently, as from the surface of the lungs and skin; others occur irregularly; but in a certain number of cases the compensating action recurs periodically, assuming the monthly type, the type of the function which is falling into disuse.

DURATION OF MENSTRUATION.

Operating on 177 cases, B. de Boismont found the average duration of menstruation to be about 27 years in Paris. Out of 500 cases, I found it to be nearly 32 in London. I also ascertained, that menstruation lasts longest in those who menstruate earliest in this country, for the unanimous testimony of travellers renders it almost certain, that in India, and in tropical countries, cessation often occurs from 30 to 35 years of age.

Thus while in the well-to-do-working population of London the mean duration of the menstrual function is about thirty-one years, in Paris, amongst women principally belonging to the same station, the mean duration is nearly twenty-nine years. It is 23 years, says Raciborski, for the Jewish women in Poland, and 31 for Polish women of the Slavonic race. Dr. Ravn, of Copenhagen, has enabled me to demonstrate that first menstruation occurred in Sweden about 2 years later than in England, and a reference to the fecundity

table of Sweden and Finland does not show that procreative power is prolonged in so northern a latitude beyond the limits which bound it in England and Ireland; I therefore infer that the period of procreative power is also shorter in northern latitudes than in England. In other words, the procreative power of man lasts longer in temperate than in hot or cold climates.

CHAPTER II.

“Propter ovaria sola
Mulier est quod est.”

THEORIES OF MENSTRUATION.

FOR ages it had been supposed that the womb was principally concerned in the two parallel phenomena of generation and menstruation, but within the last few years it has been proved, that “the ovary is the workshop of generation,” and that it contains the inciting cause of menstruation. It is very obvious, that no organ can derive its power of action from any other organ, the appearance of which is posterior to its own, whether in the development of the embryo, or in the successive complication of organs in the zoological series; I may therefore infer that the ovaries, which appear first, impart to the uterus its special power of action. It is also manifest, that every organ receives its stimulus from that which follows it in the successive evolution of other parts of the system, as seen in the development of the embryo. Hence, it is the uterus which stimulates the ovaries to increased action. Moreover, in any series of organs constituting an apparatus, the middle organ is always placed between an organ anterior to itself, from which it derives its *ratio standi*, its final end—and a third organ, whose development is posterior to its own, and from which it derives its appropriate stimulus. The uterus, therefore, derives its stimulus from the external organs of generation, and the reason of its existence from the ovaries. The relative importance of the organs of generation being clearly established, I shall briefly observe, with respect to the ovaries, that they are throughout the scale of creation the *ultima ratio* of generation. In woman it has been amply shown, by the successful experiments of modern observers, that the ovaria are the essential organs of reproduction, and that in them originate the greater proportion of those sympathies which have been

so long generalized as uterine ; furthermore, that the development of the pelvis, of the uterine system, and of the mammæ, the function of menstruation, and all the peculiarities of the human female, depend upon the ovaria. These may consequently be considered the essential organs of the generative system, for they are always present, whatever form the organization may assume. The ovaria, then, not only supply that *pars ventris*—as the Roman jurists used to say—which, by the stimulus of the seminal fluid, can be developed into an individual similar to its progenitors, but they also determine the phenomena of menstruation.

With regard to the influence of the ovaria in the production of menstruation, there is not now a dissentient voice ; the periodical turgescence of the ovaries, admitted by all whose attention has been devoted to the subject, was strikingly exhibited in a woman who laboured under hernia of the ovary, projecting through the inguinal canal of the right side. —*Verdier, Traité des Hernies*, 1840, p. 396. The volume of the tumour varied much, but was always observed to be large immediately before the catamenia, to diminish on their irruption, and to become very small indeed when the discharge was abundant. A similar case has been under Dr. Oldham's care for the last year : the central sexual organs are wanting ; there is no vagina or uterus ; but the two ovaries are external to the inguinal canal, and at the menstrual times, one increases enormously and then decreases.

Nature proves the relative importance of the ovaries and the womb in women who, from some unknown cause, have been congenitally deprived of one or the other of these organs. The following cases of absence, or of a rudimentary state of the ovaries, show, that we are right in recognising, with Owen and Macfarlane, with Lauth, Dance, and Isidore Geoffroy de St. Hilaire, that the ovary is the only essential part of the generative system. In the *Repertoire d'Anatomie Pathologique*, Tom. V., Lauth gives the following case :

CASE 6.—A woman dying at the age of fifty-three, had never menstruated nor borne children, and connexion, often performed during several years, gave no pleasure. Her appearance was masculine, skin brown, muscular system

strongly developed, the mammary gland and the nipple and its areola were like those of a man. Her pelvis was also masculine; the subpubic angle, instead of measuring from ninety to ninety-five degrees, as is usual in woman, only measured sixty-three and a half. The external organs of generation were normal; the clitoris well developed; no hymen; the vagina short, but wide and smooth; the uterus *bicornate* and *semi-membranous*; no ovaries, the places of which were marked by a small quantity of cellular tissue. Since it is on account of the ovaries, says Lauth, that woman is what she is, no wonder if, in their absence, other important parts of the sexual system should have been, at some very early age, arrested in their development.

In the same journal—Tom. X.—Mr. Renaudin relates a case of absence of the womb coinciding with rudimentary ovaries. The woman had never menstruated, the breasts were undeveloped, and the external organs of generation were imperfect. Morgagni relates a similar case.

Thus in absence of the ovaries, the constitution is generally masculine, the womb rudimentary, and there are no menstrual pains, nor any monthly crisis; although cases have been noted, in which there was congenital absence of the uterus, when the ovaries were present, in which the individuals experienced monthly violent pains about the pelvis, and all the other symptoms which accompany ordinary menstruation, though without the sanguineous discharge. The following are instances of the absence of uterus, with the presence of the ovaries:

CASE 7.—Dance relates—*Archives Gén. de Méd.*, Tom. XX.—that a woman, twenty-seven years of age, died without having menstruated, or without ever having the prodromata of menstruation; though in stature, form, and mammary development, she was a perfect woman. For four years she had lived with a man, and had sexual desires. The external organs were well formed, but the vagina only consisted of a *cul-de-sac*, half an inch long. The rectum was found adherent to the bladder; the ovaries and tubes were normal, and they met in a swelling about as big as a nut, which neither presented the form nor cavity of the body or neck of the womb. A case of complete absence of the

uterus is given by Dr. Ziehl, of Nuremberg.—*Gaz. Méd. de Paris*, 1851.

CASE 8.—A woman, aged thirty-seven, married at thirty-two, was perfectly healthy, had never menstruated, but often had leucorrhœa. Two of her sisters had well menstruated. Connexion was never perfectly performed, and gave no pleasure. She died tuberculous. The labia and clitoris were perfectly developed, but scarcely could the index pass into the vagina, which was a *cul-de-sac*, an inch long, and behind it there was no trace of uterus. The Fallopian tubes were in the broad ligaments behind the bladder, the fimbria were normal, their opening free, but they had, of course, no uterine aperture. The ovaries were hard, dry, and externally much corrugated, but this was probably the effect of age. Duplay has published—*Arch. Gén. de Méd.*, Tom. IV.—under the head of uterus without cavity, and ovarian apoplexy of both ovaries, a case which is one of arrested development of the uterus with the persistence of the ovaries:

CASE 9.—A woman died of phthisis, at forty-three. She had never menstruated, nor borne children. The body of the uterus was similar to that of a fully-developed foetus; it was six lines high and ten broad; the neck of the womb was eighteen lines long, and its cavity did not continue into what represented the body of the womb. In the left ovary, which was of the usual size, and presented externally *several cicatrices*, there was a cavity half an inch in diameter. Its surface was smooth and serous, and it contained a black clot floating in a little blood. The right ovary also contained cicatrices, cavities, and clots. Cases of women, without either ovaries or uterus, and of others, with ovaries, but without uterus, will be found in the medical journals, and in Recamier's work on Cancer, Vol. II. p. 695.

When, therefore, the ovaries exist, they give to woman the appearance usual to the sex, and although the menstrual flow may be absent, from the absence or arrest of development of the womb, many of the phenomena of menstruation are often present. Cases, however, occur where, after extirpation of the womb, or of its neck, a menstrual discharge takes place from the cicatrix and the vagina. Nature sometimes institutes experiments by destroying particular organs

by disease, as, in cases of diseased ovaria where the complaint involves the whole structure of the gland, and not of one only, but of both, menstruation disappeared; there is also often a remarkable coincidence between the complete cessation of the menses, and the entire degeneration of the ovaries, so that the progress of the complaint may be judged of by the disappearance of the catamenia.

What nature does by disease, physiologists have frequently effected in some of the lower animals; and without entering into long details I will allude to the curious observations of Mr. Yarrell, which prove that the organization of the inferior animals may be modified at any time of their existence by the removal of the sexual organs. Having remarked that several female pheasants assumed the appearance and plumage of the male, he found, in every case, that the intensity of this masculine change was in direct proportion to the extent of lesion of the female organs of generation. The ovary was red, hard, atrophied, the oviduct diseased, and obliterated near its infundibuliform extremity. These lesions existed in a female pheasant, whose plumage was still *female*, from which he concludes that the ovarian lesion precedes the change of plumage. With respect to the male bird, the red appendages, or wattles, do not grow to their usual size, the spurs remain short and obtuse, and the feathers become somewhat similar to the hen's. If the oviduct be obliterated, the development of the eggs ceases; the bird attempts to sing; the crest grows; short and blunt spurs make their appearance; the plumage resembles that of the male, and the bones of the lower part of the back do not become sufficiently large to give to the pelvis its female development.

Dr. Lesauvage relates—*Gaz. Méd. de Paris*, 1851—that M. Desbans had very frequently spayed cows affected with *furor ovarinus*, and which are technically called *vaches taurelières*. Such cows, it is said, “ont l’œil hardi, les oreilles dressées, elles inflechissent frequemment les reins, agitent sans cesse la queue qu’elles portent haut, et on remarque aux deux côtés de son origine, une dépression qui produit une sorte de retraction de la vulve. Elles sont toujours en mouvement, sautant sur les autres sans cesse, ne prennent ni

repos ni embonpoint. Dans l'herbage elles fatiguent continuellement tout le bétail, attaquent le taureau lorsqu'il veut fonctionner, font de grands efforts pour le remplacer et parviennent même quelquefois à l'éloigner." When the ovaries are extracted from these cows—an operation which M. Desbans is reported to have performed one hundred times in twenty years without one fatal accident—it has the immediate effect of quieting the nervous system, and of disposing them to fatten speedily. This reminds us of the mode of curing mania ascribed to the priests of Cybele: "Qui ante castrationem maniacy erant, sanam aliquanto mentem ab illo recuperant."

The atrophy of the ovaries at the change of life, is followed by a more masculine aspect, and by the growth of hair on the lips and chin. It had not escaped Hippocrates, that the same appearances often accompanied the prolonged suppression of menstruation, and from this development of hair on the lower part of the face of young women, I have often correctly inferred morbid menstruation.

But the influence of the ovaries on the female organism has been experimentally shown in women as well as in domestic animals, and it appears that the destruction of the ovaries by artificial means, to serve the morbid jealousy of Eastern despots, is followed by the arrest of that characteristic luxuriance of form in women, and by their assuming the drier texture, the harder outline, and the angular harshness of men. Andramytis, or Andramys, and Gyges, both kings of Lydia, are accused by a long list of authors—*Mém. de l'Acad. R. de Chyr.*, Vol. III. p. 515, *Edit. de l'Encyc. des Sciences Méd.*—of having instituted this barbarous practice, and it might be thought they referred to the process of fibulation, were not their assertions confirmed by those of Dr. Roberts, who* affirms that in 1841, being in the vicinity of Bombay, he had an opportunity of examining three female eunuchs, called *Hedjera*, and that, according to the account of an old Brahmin, the atrophy of the ovaries was effected by acupuncturing them with needles impregnated with the

* Fragment d'un Voyage dans les Provinces intérieures de l'Inde en 1841, par le Dr. G. Roberts, Membre de la Société Orientale de Paris, chargé par M. le Ministre de l'Instruction Publique d'une Mission dans l'Asie centrale, publié par la Société Orientale. Paris, 1843.

juice of the unripe *thelpheut*. (*sic*) Dr. Roberts thus describes these women :

“Point de gorge ni de mamelon ; l’ouverture du vagin entièrement obliterée et ne montrant aucune marque de cicatrice. . . . ; atrophie complète du tissu cellulaire aux parties génitales très-prononcée sur le reste du corps, quoique cependant à un degré moindre : pas de hanches, c’est-à-dire aussi peu développées que chez l’homme ; on eût dit que les branches descendantes du pubis et les branches ascendantes de l’ischion s’étaient réunies et soudées à la place que devait occuper le vagin. Les fesses étaient aplaties, les rotules saillantes : point de flux hémorrhoidal, point d’hémorrhagie nasale pour suppléer au flux menstruel des époques périodiques ; point de désirs vénériens pour l’un ou pour l’autre sexe. Ces femmes étaient grandes, robustes, bien musclées ; elles avaient une voix mâle, des mouvements brusques accompagnés de gestes expressifs.”

Not satisfied with affirming that the ovaries determine the menstrual flow, many of the experimental physiologists who have thrown so much light upon menstruation, assert that it is invariably caused by ovulation, and always accompanied by the shedding of ovules from the ovary. Pouchet and Raciborski, in France ; Bischoff and Baer, in Germany ; Drs. Lee and Martin Barry, in England, are amongst the warmest supporters of this position. It has, however, been considered premature by Valentin, Coste, and many of those who have been able to test its fallacy after careful observation in a large field of inquiry. Thus, in three cases in which Dr. Ashwell had opportunities of examining the ovaria of women who died during the flow of the catamenia, there were no signs of the rupture of Graafian vesicles and the escape of ovules. In one of these cases the woman had menstruated regularly for several years, and yet the ovaria were perfectly smooth ; “there was neither rent nor cicatrix marking the site, either of a present or former maturation, and escape of a Graafian vesicle.” Still Dr. Ashwell admits the periodic return of ovarian excitement as the condition of menstruation, though this excitement may not always reach the point of maturing and discharging ovules.

Mr. Paget’s report on the appearances found in the body of Mrs. Manning, tells forcibly against the ovular theory.

CASE 10.—Maria Manning had begun to menstruate about twelve hours before her execution. The ovaries were of moderate size, and presented numerous marks of cicatrices, with some small bands and threads of false membranes on their surfaces. In the right ovary, three Graafian vesicles projected slightly on the surface and looked healthy, containing clear serous fluid. A fourth was of very large size, about 3''' in diameter, and prominent. In the left ovary, one Graafian vesicle was fully developed and prominent. We looked for ova in the contents of all these, but in vain. The surface of the ovaries was generally rather more than usually vascular, but there was no peculiarly vascular spot, nor any appearance of the recent rupture of a vesicle, or the discharge of an ovum. In the right ovary, near the surface, was a small cyst or cavity, containing what looked like a decolorized clot, and bounded by a thin layer of bright yellow ochre substance—an excellent example of a fibro-corpus luteum of one or more months' date, certainly not more recent. The veins at the lower part of the ovary were large and turgid. The ovarian ends of both tubes were completely closed. Tracing the tubes from the uterus, they proceeded for about two inches naturally, and were, we think, both pervious. They then began to dilate and to grow thinner, and thus, gradually dilating, they ended in pyriform enlargements, completely closed in, presenting no trace of orifice or of fimbriæ, and not attached to the ovaries, except by some intervening tissue. Each of the enlarged saccular ends of the tubes measured about 1'' by $\frac{1}{2}$ '' inch, and its walls were thin, and lined with mucous membrane, which had a ciliary epithelium. They were filled with thick, grumous-looking, and ropy claret-coloured blood, with well-formed blood-corpuscles, all like those of recent blood, and including a very large proportion of white ones, some of which were very large, and contained numerous granules. This blood could be pressed along the tubes to the uterus; but the tubes appeared to have contained none, except at their dilated ends. The blood did not coagulate, and no serum separated from it. The uterus was large, especially at its cervix, which appeared swollen. The os uteri was circular. The walls of the uterus were thick and

soft, and their outer surface, about the fundus, had a partially livid hue. The cavity of the uterus was nearly full of black fluid blood, containing well-formed corpuscles, with an ordinary proportion of white ones. In this blood was a small round mass of soft white flocculent substance, about 1" in diameter, like decidua. It appeared to be formed entirely of cells, like lymph, in various degrees elongated and attenuated, as in the development of filaments of cellular tissues. They were just like those of the deeper layers of granulations, only smaller. The mucous membrane of the uterus appeared pale, but healthy. False membranes were attached to many parts of its fundus. The closure of these Fallopian tubes accounts for this woman having been barren, though married, and having, notoriously, had frequent intercourse with others besides her husband.—We afterwards learned that she was a woman of extreme sexual passion.

No one has more forcibly attacked the ovular theory than Dr. Ritchie, in a valuable series of papers; he adduces five examples of menstruation, neither caused nor accompanied by ovulation. Thus, in Part I. Section II. p. 652, *Medical Gazette*, 1844, I find, in the first case, that the woman had menstruated 10 days before death, yet the ovaries presented no external puncture nor cicatrix, although both ovaries were filled with vesicles.

In the second case menstruation had taken place thirteen days before death, but the ovaries showed no puncture nor cicatrix, although containing numerous vesicles, one as large as a garden pea. In the 7th section of Dr. Ritchie's second part, he gives Case No. 1, in which menstruation had occurred six days before death, yet there was no trace of recent ovulation. In Case 7, menstruation had taken place a week before death, but there was neither opening nor scar on the surface of the ovaries. In Case 11, menstruation had occurred a fortnight before death, but the ovaries showed no sign of recent ovulation. On the other hand, the 10 dissections contained in the first section of Dr. Ritchie's papers, show that there may be both ova and ovulation without a vestige of menstruation.

With regard to dissections in confirmation of the coincidence of menstruation and ovulation, Dr. Ritchie says he

has repeatedly seen the opening into a discharged Graafian vesicle to be still patent, and sometimes the vesicle to be filled with a florid blood clot, in the third and fourth month of pregnancy; and, in one case, he found the corpus luteum of a woman in the ninth month, to communicate with the surface by a distinct foramen. It is thus clear that the mere observation of a rent vesicle filled with blood, at a menstrual period, does not prove that the flow is the result of ovulation.

Dr. Ritchie thus concludes:—"I have shown in the memoirs referred to, that ova are discharged in large numbers from the human ovaries throughout the earliest infancy, in childhood, during amenorrhœa, pregnancy, lactation, and to the utmost term of old age, without giving rise to a coloured uterine discharge; and, on the contrary, that menstruation may be present for as many as eight or nine times consecutively, without the rupture of a Graafian vesicle, and also that this function can be normally performed for the greater part of the whole menstrual life of the woman, although the Fallopian tubes be so agglutinated to the ovaries, or destroyed in their canals, that they are impervious to an ovule. There are a certain number of instances of women having become pregnant before they had ever menstruated at all; others have had all their children, amounting in a patient of my own to five, without menstruating once; and some, again, have been known to fall with child as long as two years after the menses had finally ceased. For these and other reasons on which I cannot here insist, I believe that the hypothesis now spoken of is no more than a pleasing imagination, which will vanish with the light furnished by succeeding inquiries, and that the efficient cause of menstruation will yet appear, and be generally acknowledged to be *ovarian*, indeed, but not *ovular*."

Hard pressed by these facts, Meckel admits, "that although ovulation never takes place without inducing menstruation, still it does not take place at every period;" but this is evidently an abandonment of the ovular theory, which is equally attacked by what I call remittent menstruation. When the flow occurs regularly, for years, every fortnight or seven days, is it caused by a fortnightly or a weekly ovulation?

I do not believe it, neither has Négrier adduced facts to confirm his hypothesis that ovulation would so proceed in the two ovaries, that, in one, a vesicle would always ripen, say, on the first of a month, while in the other, a vesicle would not ripen until the 15th. Doubtless at the period of puberty ovula begin to be matured in the ovaria of women, but that these are *only* matured periodically, is contrary to truth, for it has been proved, by the researches of Dr. Ritchie, that the ovula may be matured and discharged during the intervals of menstruation, and even at periods when that function is not taking place. Carus confirms these assertions, by stating that in the ovaria of girls from two to four years of age, he has observed the follicles fully developed, and the ovule floating in the fluid of the Graafian vesicle.—*System des Physiologies*, von Carl Gustave Carus.

The ovular theory is also attacked by another form of argument:—"I know of cases," says Dr. Oldham, "which I have carefully inquired into, where impregnation occurred at the respective times of ten, twelve, and twenty-one days after the monthly periods; and while on the one hand I am quite ready to admit a greater disposition to impregnation shortly after a menstrual period, yet I know of no facts to disprove the opinion that the human female is susceptible of impregnation at any time between her monthly periods."

Hirsch—*Schmidt's Jahrbuch*, 1853, No. 2—has likewise seen a case wherein impregnation took place at the 22nd day after healthy menstruation, and he observes correctly that as the Jewish women are obliged to abstain from intercourse five days before and seven days after menstruation, that race could not be so prolific as it is known to be, if the ovular theory of menstruation is true. Again, if the ovulation theory be true, how can the menstruation which occurs during pregnancy be accounted for?

The possible coincidence of ovulation is proved by the cases recorded by Ecker, Pank, Négrier, Raciborski, Dr. Michel of Charleston, U.S., Dr. Hannover of Copenhagen, Mr. Girdwood, Dr. Letheby, Mr. Whitehead, and many others, but the contradictory facts which I have adduced, and the arguments into which I have entered, unquestionably show that ovulation and menstruation are not convertible

terms, that they relate to phenomena which may be associated with, but are often entirely separated one from the other. Ovulation is common to all animals; is probably rendered more energetic by a higher temperature, more abundant food, and by sexual stimuli. Menstruation, with its peculiar ruling force, its prodromata, attendant symptoms, and critical flows, is peculiar to woman. The more I observe the more I am struck by facts which cannot harmonize with the ovulation theory. I have patients in whom any unusual nervous emotion or over-exertion will bring on the menstrual flow with the usual menstrual symptoms, although they may have only just recovered from this discharge. How can it be supposed that an ovule can be ripened, and the dense ovarian envelop suddenly perforated by the fatigue of a dinner-party, by hearing disagreeable news, or by an altercation with a servant? Am I to suppose that the emerging of an ovule from the ovary causes the floodings of cessation or sero-sanguinolent discharges, no matter whether they occur every week or every six months.

The laws of ovulation are as yet imperfectly known, but I believe that it proceeds as regularly, fatally, and uninterruptedly as nutrition; whereas the menstrual function shifts its periodicities, returning about the 14th or the 21st day after the last epoch, whether it came at a right or a wrong time. This sudden shifting of periodic action is the special attribute of the nervous system, shows the menstrual flow to be impelled by nervous influence, and explains how a strong emotion may repel the menstrual flow or alter the time of its appearance. That sudden emotion should cause the uterine surface to perspire is only a repetition of the well-known power of emotion on other parts.

Physiologists have puzzled themselves to find the reason of women being subjected to the menstrual function; I need not, however, here discuss the opinion of our countryman, Emmett, who supposes that menstruation does not occur naturally, but is the result of social habits, which do not permit women to enjoy sexual intercourse when they feel the want of it. Dr. Leake accounts for menstruation in the following manner:—"It is manifest that the female organs, after a certain age, are so disposed as to prepare a larger

quantity of blood than is necessary for the support and nourishment of the body, which—blood—in the time of utero-gestation is consumed by the fœtus, and after delivery, by the child; but that this redundant quantity might not incommode the constitution during the time a woman is not pregnant, provident nature has ordered it off by the vessels of the uterus once a month.” I might, however, ask Dr. Leake why “provident nature” did not subject other females to the same penalty as woman? If I rightly understand Dr. Ramsbotham, he has lately discovered that “the final cause of the menstrual flow is to nourish the vivified egg, and that when it is not vivified, the menstrual flow passes away by the vagina.” An announcement which elicited objections too numerous and self-evident to render it necessary to detail them. I merely object to it on the plea, that cases occur similar to that described by B. de Boismont, of a lady who, during her whole life, always menstruated by the *mouth*, and yet had a child. Such cases show, that although the menstrual flow indicates an aptitude to conceive, it is useless for the fecundation or for the nutrition of the germ.

Menstruation may serve to teach the female economy how to lose blood with impunity, which is a marked peculiarity of woman. No more can be said. It is better to admit our ignorance, instead of giving as sterling truths the coinage of our imaginations.

CHAPTER III.

“The epigastric nervous centre is the chief lever of the vital forces.”—GALEN.

ON THE OVARIAN NISUS.

I HAVE investigated some of the conditions of the periodical currents of fluids in woman; every current testifies a moving force, and although a better idea of the nature of the ovarian nismus will hereafter be formed by its effects, still I cannot proceed without inquiring into its analogies, particularly as this force is the essential part of menstruation, being often shown by nervous symptoms unaccompanied by any flow. It has, moreover, been ascertained that the ovary is the focus and starting-point of this force. Now, every force in the human body has for substratum a nervous organization; it is, therefore, in the nerves of the ovaria that this force must reside. These nerves come from the solar plexus, and are part of the ganglionic nervous system, to which must be ascribed the ripening of the germs in the ovary. This is an act of *vegetative* life, for by pressing either ovary we may rupture its vesicles, but not detach its ovules, which is done by the ovary after preliminary absorption of its dense covering. It must be, moreover, borne in mind, that paralysis of the cerebro-spinal nerves has not prevented the process of ovulation, so that it must be under the influence of the ganglionic nerves; or, in other words, nutrition and generation are subserved by the same system of nerves, on the individual peculiarities of which depend alike the differences of nutrition and menstruation in each individual. Thus, the Hungarian sisters were united at the lower part of the back, and, dying at the age of 22, the abdominal vessels of both were united at the loins, so they had the same blood in their vessels. The uterine function, however, differed as to the period and quantity of the secretion. The blood was the same, but the ganglionic nervous influence was different.

The just appreciation of the menstrual force, and of the causes and nature of many diseases of women, can only be gathered from a knowledge of the functions of that system of nerves.

Little is known about the ganglionic nervous system, and that little is often merely classed amongst the curiosities of medical literature. I might refer the reader to the authors I shall soon quote, and to what I have written upon this subject in my work *On the Change of Life*; but the healthy and morbid manifestations of the ganglionic system play too important a part in the physiology and diseases of women for the consideration of this system to be omitted from this work.

The difference of size in the two sexes depends on the greater development of the organs of *animal* life in the male, and as the nerves and ganglia of the ganglionic system in the trunk are in relation with the organs of *vegetative* life, these nerves and ganglia are proportionally larger in women; physiology and pathology likewise show that there is a greater amount of vegetative power in woman, for while the proper development of the testicles at once immutably imparts its characteristic effects to man,—the noblest of created beings,—in woman, the corresponding organs react more strongly on her system during the entire reproductive period of life, subjecting it to incessant vicissitudes of health and disease. The greater influence of the ovary on woman, the preponderance of the ganglionic system in the female, seems a natural consequence of the perpetuation of the race being principally confided to her, and it appears sufficient to explain the fact of woman being at all ages endowed with a greater amount of vital tenacity than man, and her life being prolonged to a greater length.

From the experiments and writings of the celebrated anatomist Winslow, and those of Bichat, Reil, Broussais, Lobstein, Wilson, Philips, and Brown-Séguard, it has been clearly proved,

1st. That the ganglionic nervous system is vaso-motor, and presides over the functions of the heart and arterial circulation.

2nd. That it is intimately connected with nutrition, with

the building up and the pulling to pieces of the human body, otherwise its minute filaments could not justly be compared by Scarpa to a spider's web, enveloping in its inextricable mazes the arterial system down to the minutest subdivisions, into which some of their ramifications are so incorporated, that Soemmering and Berends called them *nervi vasculares*.

3rd. That it is the nervous link by which the principal viscera of the body consent to unity of action.

4th. That it is an independent system, for while it exists alone in the lower animals, it co-exists with the cerebro-spinal system in the higher, though without being modelled after its plan, and with such little dependence upon it that the ganglionic nervous system is found fully developed in infants, and most perfect in idiots.

5th. That it is constantly reacted upon by emotional impressions emanating from the brain.

6th. That it constantly reacts upon the cerebro-spinal system; in health imparting a sense of strength without any sensation referable to the organs of vegetative life; but should *they* be diseased, then the ganglionic nervous system convinces the brain that it is intimately associated with a stomach, a liver, or a womb.

7th. That this ganglionic nervous system has a centre of action—the solar plexus, called by Wrisberg and Lobstein the *cerebrum abdominale*.

For the study of these propositions, I refer to the authors mentioned, and shall merely quote from my work *On the Change of Life*, what is necessary for the better comprehension of my views.

Brachet found that the solar plexus and semilunar ganglion of a calf might be repeatedly pricked with a scalpel, without the animal giving any sign of pain, though if he waited until the ganglion appeared inflamed and then pricked it, the animal was evidently hurt. He then pricked and pinched the various spinal nerves leading to the semilunar ganglion and solar plexus, and the animal gave signs of pain; but when he had cut through several of these nervous filaments, and irritated the portions no longer in communication with the ganglia, no distressing symptoms were exhibited. In an experiment, similarly conducted on another calf,

Brachet waited until inflammation had developed pain in the semilunar ganglion, when he cut through all the nervous filaments leading to the ganglion, and it could then be pricked without the animal evincing any signs of suffering; he then concluded that, in their healthy condition, the semilunar ganglion and plexus give no cerebral sensation, and that in an inflamed state they are the seat of pain, only on account of the spinal nerves which go to the ganglion, and transmit its morbid sensations to the brain. Thus it seems that the ganglionic nerves transmit their morbid impressions to their ganglia, and it is in these ganglia that the spinal nerves come and fetch morbid sensations, and transmit the knowledge of them to the brain, so that the mind becomes conscious of an order of sensations, of which, under ordinary circumstances, it is not destined to take cognizance. Valentin and Dr. Handfield Jones seem to have arrived at similar conclusions, which are as applicable to neuralgic as to inflammatory pain. A blow at the pit of the stomach does not kill by inflammation, but by a neuralgic shock, so suddenly intense, that the laws of pugilism forbid "to hit under the belt." The blow may, however, be so graduated as to determine corresponding shades of neuralgia and of leipothymia, while, in nightmare, anomalous epigastric symptoms are produced by indigestion. The anguish of vomiting is partly due to the more or less intense concussion of the epigastric ganglia, which explains the intense debility it causes, and the not unfrequent deaths that occur when,—as on board ship,—it could not be checked. Besides the capability of being stunned by a blow externally applied, the great ganglia are susceptible of receiving shocks from centric causes spontaneously evolved in the system. "*Miseros vidi ægrotos,*" says Lobstein, "*qui, vix somno dediti, subito fuerunt expergefacti atque valido et quasi electrico ictu territi, ab epigastrio proficiscente; crudele phenomenon, quod per plurimum mensium spatium duraverat.*" Other authors have noticed the same strange sensation; but independently of these rare occurrences, it will be obvious to the pathologist, that the ganglionic centre is constantly receiving, from causes spontaneously arising in the frame, milder shocks, which determine the varied forms and degrees of cardialgia.

This occurs to both sexes during convalescence, in consequence of the undue strain put on the ganglionic system for the increased impulse required by nutrition ; in the presence of worms, when the expansions of ganglionic nerves are peculiarly susceptible of being irritated ; in agues, of which the ganglionic system is the prime motor ; in hæmorrhoidal and other flows, when indiscreetly stopped by cold water ; in chlorosis, hypochondriasis, and in the earliest stages of insanity, before the ganglionic, are cast into shade by the magnitude of cerebral symptoms. But the greatest and most frequent cause of disturbance of the ganglionic centres, is the strong reaction of the reproductive organs : puberty, menstruation, pregnancy, lactation, and cessation, almost always cause slight forms of cardialgia, and sometimes the severest, leading to suicide and to the varied forms of insanity. Woman suffers more than man, for her ganglionic nervous system is doubly taxed, for self-nutrition, and that of the race, and if she be susceptible of so often “ tumbling to pieces,” and of being again knitted firmly together, it is because her ganglionic nervous system has been endowed with extraordinary powers for good or for evil ; but man does not escape. Schmidtman, who paid so much attention to nervous affections, says, and I confirm the correctness of the remark, “ whenever a young man consults me for cardialgia, I suspect onanism.” Cardialgia, under varied forms, is frequently observed in spermatorrhœa, and explains why some commit suicide, and many become hypochondriacs. The debauchee and the *roué* are frequently at a loss for terms to express the annoyance of their sufferings at the pit of the stomach. It is perfectly incomprehensible that so much vital force for good or for evil should be centralized in little irregular lumps of nervous matter, and in sundry tangled skeins of nerves, the topography of which, like that of the polar regions, is differently mapped out by successive observers ; but though incomprehensible, it is no less certain that these knots of nervous matter, and these tangled skeins of nerves, are indissolubly connected with the supreme power which guides the processes of healthy or diseased nutrition and of generation, which is but another mode of nutrition. This is proved by the writings of Winslow, Bichat, Reil, Wilson,

Brachet, Philip, Broussais, Lobstein, &c.; and I refer the reader to the works of these authors, and to the late experiments of Claude Bernard and D. Axmann. Whether, with Bichat, anatomists look upon the ganglionic nervous system as independent, or with Haller, as an offshoot of the cerebro-spinal system, I, as a physiologist, follow Müller, who considers the ganglia the source of the energies of the sympathetic nerves, and the fountains from which the ganglionic draw the constant, gradual, galvanoid action which is kept up in the capillaries throughout the frame. It, moreover, appears that each separate ganglion sends its contingent of nervous influence to the central ganglia, which react on the brain, and that the force with which the ganglionic nervous system is endowed, is as much centralized in the epigastric region as the intellectual faculties are in the brain. Discordant as medical theories generally are, it is singular how often the importance of considering vital force as centralized in this epigastric centre has been prominently asserted.

Recording the current opinion of his time, Plato places the third species of souls, or the vegetative soul, in the epigastric region, explaining that it has no share in intellect and reason, though not devoid of the sense of pain and pleasure. Galen and Fernellius called it the principal lever of the human forces; Van Helmont there placed his *Archeus*, or principal ruling power; Wrisberg and Lobstein treated of it as the *cerebrum abdominale*; Hunter called it the sensitive centre, and the centre of sympathies; and Bichat, Broussais, &c., considered it the prime conductor of nervous influence. The importance of this region as a centre of power, is even shown by the erroneous theories which made Buffon and many medical men place the seat of the Soul in the diaphragm, and by the popular belief that the human passions are centred in the præcordia, whereas they merely react upon it as stimulants, when the passions are of an exhilarating nature, or as depressants, when they are of a contrary character.

In health, each viscus sends its contingent supply of nervous influence to the central ganglia, which reacts on the brain, causing the energy of health, and those sensations

known by the term "high spirits." When one of the viscera becomes a prey to morbid action, by its ganglionic plexus, it reacts on the semilunar ganglia which influence the brain. When the disturbance is slight, it is felt as a loss of power, or as what is termed "low spirits," or as a sudden failure of mental energy on the sudden occurrence of a sensation of sinking and faintness at the pit of the stomach. From some slight visceral disturbance, lowness of spirits and unexplained melancholy frequently come over us like a cloud, and if the cloud does not pass away, what is this but hypochondriasis, or insanity? the cause of which will be sought in the brain by those who only take a partial view of human pathology. Without this preliminary, I could not have brought clearly into view the influence of that portion of the ganglionic system which gives its energies to the ovaries, and in which resides the menstrual force. Like other viscera, the ovaria react on the ganglionic centre, and thereby on the brain, but with this difference, that the ovaria have a double action. They have a continuous and an intermittent action, one or both of which may be either healthy or perverted.

1. The continuous action of the ovaries, when sufficiently energetic, stimulates the semilunar ganglia, and these the brain. It augments the power of this lever of the vital forces, gives increased energy to nutrition, ripens the body to full perfection, and prompts the brain to the satisfaction of the generative functions.

When the nervous energy of the ovaria is above par, then it reacts too forcibly on the epigastric centre and on the cerebro-spinal system, tending to produce the ovarian temperament, which is not in itself a disease, but the strongest predisposing cause of diseases in women.

When the nervous energy of the ovaria is below par, then the epigastric centre not being sufficiently stimulated, it is unable to promote the healthy performance of nutrition, the blood is impoverished, and the whole system suffers from a neuralgic affection of the ganglionic nervous system which is commonly called chlorosis.

2. Unlike other ganglia, the ovaria assume a periodical action. The menstrual nismus is their function; and while all

other viscera, when in health, never intimate their existence to the brain, the ovaria do not healthily perform their monthly function unless it be attended by a certain amount of nervous disturbance. This ovarian force is generally shown by nervous symptoms, and by the passing of blood or mucus from the generative intestine; but this blood is the outward sign of the phenomenon, and merely indicates the unseen nervous propelling power, for the reader knows that the relief of the menstrual pains is not always in proportion to the quantity of the flow, for sometimes the passing of a small quantity will effectually relieve, while that of a large quantity will not. When the menstrual flow is suddenly suppressed, the nervous accidents which may occur do not depend upon a few ounces more or less of healthy blood not being removed from the vessels, but on the sudden recoil or retrocession on the ganglionic nervous centre of its centrifugal currents, resulting in a sudden shock to the brain, which is at times stupified into sleep or coma, or excited into hysterical delirium.

All that is known about this menstrual force is, that it resembles those other conditions of the ganglionic nervous system which underlie the visible phenomena of fevers. The ovarian ganglia so react every month on the whole ganglionic nervous system, as to cause a peculiar fermentation in the blood. This does not take place without a set of symptoms similar to those which occur during the first periods of active hæmorrhages, and of intermittent fevers. These symptoms can be classed as ganglionic, cerebral, and spinal, and they are relieved by critical discharges.

Dr. Mojon asserts, *Revue Médicale*, 1836, that the menstrual force is electricity, arguing from the following experiment: If the womb of a woman, dying during menstruation, be successfully injected with ink, nothing is then observed but the oozing of water in its cavity; but if an electric current be passed through the womb, then a black dew covers its surface without it being possible to perceive any vascular rupture, even with the use of a strongly magnifying glass. Mojon supposes that there is a development of electricity at puberty which is repeated every month, under which influence the blood flows, and that twenty-four days

are required for the womb to acquire sufficient electric tension to cause the flow.

This explanation would be very satisfactory if it were proved that nerves influence the body by an electric fluid, and until this be proved, it is more correct to consider the menstrual nismus as a nervous force or influence of which the essence is unknown, though its power is great, for it so often punctually propels the menstrual flow, despite the antagonizing influences of emotion, cold, and disease. Thus Recamier had a highly nervous patient, in whom the menstrual flow went on undisturbed at the death of her father; and when forced to fly without clothes, to escape from fire; and when her carriage was upset, and she was nearly drowned in the river.

THERAPEUTICAL INDICATIONS DURING THE MENSTRUAL EPOCHS.

1. The menstrual force should be promoted by warmth, exercise, exhilarating emotions, and stimulants.

2. It must not be checked by cold, by over-exertion, by fright, by strong mental emotions, or by medicine.

I entirely agree with the popular prejudice, and with the almost unanimous voice of the profession, that it is injudicious to administer strong medicines to patients at the menstrual epochs, unless the complaint be of a serious nature, in which case it must be treated without any regard to the catamenial function. Neither should I have alluded to the subject, were not the contrary doctrine inculcated by my friend Dr. Hannover, of Copenhagen, whose views have been published in the concluding volume of the *Lond. Med. Gazette*.

This distinguished pathologist has shown, by a series of most difficult observations, that the menstrual flow is somewhat interfered with by the exhibition of medicines, and still, with apparent contradiction, he advises their unmodified use at the menstrual epochs. He is supported in his opinion by the practice of Dr. Christenson, of the Almundeberg Hospital, who, whether menstruation be present or not, employs injections of decoction of bark and alum by the vagina three or four times a day in inflammation of the mucous membrane

lining the female parts of generation. Dr. H. Bennet has advocated the same plan in his last edition. It might do mischief, and can do no good in ordinary cases, but the plan is useful when inflammatory affections of the womb are of long duration. The injections should be tepid, unless the object be to restrain a too abundant menstrual flow, in which case they should be cold, and continued for sufficiently long a time, to prevent reaction, but even when thus employed, I have sometimes found that they rather increased than diminished the flow.

CHAPTER IV.

“Hodie certissime evictum est, quod tot numerosæ sensationes, quæ in epigastrio percipiuntur, neque ad musculos, neque ad vasa, neque ad organa gastrica sint referenda, sed unice ad plexum nervorum gangliosum, trunco cœliaco insidentem, atque a Wrisbergio summo cum jure *cerebrum abdominale* vocatum.”

LOBSTEIN.

ON THE GANGLIONIC SYMPTOMS OF MENSTRUATION.

ON taking a comprehensive review of the various stages of the reproductive process, I am struck with the frequency of prostration of strength, as a predominant symptom from which even healthy women suffer. At every recurring menstrual period, at the cessation of menstruation, after connexion, parturition, and during lactation, a loss of energy is felt more or less. It seems as if woman could not perform any of those acts which serve to communicate life, without the momentary loss of some portion of her own vital energy, reminding us of some animals who die when once they have transmitted life to others.

Sensations of debility and of faintness are some of the most frequent prodromata of first and last menstruation, even in healthy women. To use their own expression, they feel as “if they could faint off.” They feel a sensation of “exhaustion and sinking” at the pit of the stomach. It is not pain in general, but an irritating, irksome sensation, from which there is no flying; in rare cases it is a permanent sensation of heat, or the patient feels, every now and then, a burning heat run across the chest and through the body; and then follow profuse warm perspirations from the chest only. These sensations are as frequent at the first as at the last menstruation, are very distressing in cases of over-lactation, and sometimes arise from connexion, conception, pregnancy, and diseases of the womb. Fainting is a much more

frequent symptom of first and last menstruation than is generally admitted. It was found to have occurred in 14 out of 228 cases by B. de Boismont. Amongst my patients L. W. fainted repeatedly for a fortnight preceding the first menstruation, and often at other menstrual periods. A. L. frequently fainted before first and last menstruation, and during each menstrual epoch. C. S. had repeated fainting fits in the year following cessation. In E. W. and in M. A. R. fainting was the only sign of pregnancy. C. H. has been pregnant four times, and each time fainted on quickening, and once fell down in the street.

A lymphatic-looking woman had recurring epigastric pain and fainting fits during the two years previous to first menstruation, when these symptoms became less frequent. They abated after marriage, but at each of her five confinements, and without losing much blood, she always fainted and remained insensible for several hours.

These epigastric sensations resemble those of hunger, but they may occur soon after a full meal. They do not depend upon gastric inflammation, since the stomach can, even in some of the most distressing cases, digest anything. I may, therefore, re-echo Lobstein's opinion, as expressed in the motto of this chapter, and look on such sensations as indicating a peculiar state of suffering of the ganglionic centre. Nausea, and even sickness, without any sign of indigestion, or of biliary derangement, is also sometimes observed. These feelings are not the result of chlorosis or anæmia; for they may be experienced by the strongest and healthiest women. Such symptoms, both local and general, are so troublesome, particularly at cessation and during lactation, that they are what women mostly complain of. They will frequently say that "all the complaint lies in the chest," though they point to the pit of the stomach, and have not a single symptom of chest disease.

Fainting is generally considered synonymous with syncope, whereas *syncope* is the failure of the heart's action, *fainting* is the great loss of ganglionic power, determining loss of consciousness; while *faintness* is the temporary depression of ganglionic power, consciousness being unimpaired. It is true that fainting and syncope often coincide, and produce each other;

though in some of my severest cases of cardialgia, I have seen fainting occur, consciousness lost, and respiration imperfectly performed, while the heart's action was undisturbed. Dr. Copland has already noticed this fact, and states, that in similar cases, he has even sometimes found the pulse to indicate bleeding. By *fainting*, I understand the "deliquium animi," or the "defectio animi," of Celsus, the leipothymia of Sauvages, whose definition is true to nature—"Subitanea et brevis virium dejectio, superstite pulsus vigore, et cognoscendi facultate." Syncope is rare at the change of life, whereas a frequent liability to fainting occurred in 25 out of 500 women. M. S., aged 47, frequently fainted from slight exertion at this epoch, but never swooned before cessation. S. A., a strong-looking woman, aged 46, six months after cessation, was obliged, for the first time in her life, to give up work, because exertion brought on fainting, and irksome sensations of a load at the pit of the stomach. She has several times fainted off, for three quarters of an hour. She is relieved by passing wind, is not dyspeptic, but nervous, and has globus hystericus. M. G. never fainted in her life until the dodging-time, and then fainting fits occurred two or three times a week for 3 years. A. L. frequently fainted before first and last menstruation, and during each menstrual epoch. C. S. had repeated fainting fits in the year following cessation. B. de Boismont has noticed fainting at the change of life, but he has not connected the comparatively rare cases of fainting with faintness, and the debility so often complained of; but I consider fainting to be linked, by insensible gradations, to the slightest sensation of epigastric faintness, which may pass by a sliding scale into the state called leipothymia by the older writers, ending in the total extinction of vital power. The preceding considerations may throw light on some cases of sudden death, insufficiently explained by post-mortem examinations. Those who have written on ague have noted the paralysing influence of paludal miasma over nervous power. Sir G. Blane relates how the Walcheren patients, when in full convalescence, would unaccountably drop down dead; and in the hospital of San Spirito, at Rome, I have seen a man, recovering from malignant fever, expire suddenly, without any post-mortem appearances being

found to explain the cause of death. I agree with Burns, that one may explain in the same way, some cases of sudden death immediately after the placenta has been expelled, when there is a feeling of intense debility and sinking, with little or no sickness and no flooding—cases which are speedily fatal if stimulants are not given in large quantities. Cases of sudden death in puerperal women, already in full convalescence, seem to me susceptible of being accounted for by the previous observations. A tall, thin, pale-faced, flaxen-haired, inanimate lady was confined, and was doing so well that her accoucheur had ceased his daily visits, when, on sitting up to take her usual food, she fell back, and suddenly expired. Nothing was found to explain this event, but a somewhat flabby state of the walls of the heart. Cardialgia may occasionally so interfere with respiration that it has been described as uterine asthma.

In advanced age all the ganglionic nervous affections abate, except debility, which goes on gradually increasing until death occurs from the extinction of that amount of power allotted to the ganglionic system. Sometimes, however, death occurs suddenly in the midst of comparative strength, without its being accounted for by the most careful examination of the body, and then I believe it may be caused by some spontaneous shock to the ganglionic centre, similar in effect to a blow in the pit of the stomach; the gastric irritation caused by unmasticated food, possibly had this effect in some cases of syncope senilis, as suggested by Mr. Higginbottom.

CARDIALGIA WITH ESOPHAGISMUS.—When the sufferings at the pit of the stomach are intense, the ganglionic centre reacts on the cerebro-spinal system, and symptoms arise which baffle all the endeavours of the practitioner who does not consider them from the point of view I now advocate. I shall exemplify these singular complaints by extreme cases, which alone can throw light upon the more common but less intense symptoms of the same nature. It is easy to understand that ganglionic nervous disturbance will cause stricture of the esophagus, for it has been well shown by Bichat that the esophagus below the pharynx is a mixed muscle, in which muscular fibres of animal life are placed side by

side with those of organic life, and that the whole tube is surrounded by the plexuses of the vagus nerve.

CASE 11.—A lady, aged twenty-seven, of middling stature and embonpoint, with a dark complexion, grey eyes, and dark brown hair, menstruated at twelve, after suffering several years from pseudo-narcotism and sick headaches. Menstruation continued from the first, but was never regular, sometimes occurring every two, and at others, every three weeks. It varied also in quantity, being sometimes abundant, at other times scanty, but was unattended by pain until the fourteenth year, when the pains were frequently very severe. She married at twenty-four, and the following years were embittered by much distress of mind. Marriage increased the amount of the flow, and conjugal intercourse was for the first year always immediately followed by a state of stupor and complete unconsciousness, which still follows connexion, but as this is not painful, the state I describe can only be considered as the morbid influence of connexion on her nervous system. Conception took place eighteen months after marriage. Lactation was impossible. The menstrual flow returned three months after parturition, the flow and the pain were less, and when the constitution was under the influence of sulphate of quinine, it assumed the monthly type, but fell back into the three-weekly as soon as that was discontinued. During the prevailing fogs in the winter of 1850, the patient caught a severe cold and cough, but for several days no remedial measures were adopted. She had a pain at the pit of the stomach. Her appetite was not amiss, but she complained of a sense of stoppage when the food was about to enter the stomach, a little above the precordia. On learning that menstruation was expected, that the usual flying abdominal pains had already been experienced, and that there was leucorrhœa, I thought that the menstrual flow would bring relief, so did not order any medicine. I was sent for, however, in the night, and found the lady struggling with a suffocating pain, referred to the pit of the stomach. The same pain, but centupled, and which was sufficient to make her shed tears. Hot applications relieved the pain, and sleep supervened. Considering that there was no fever, nothing but pain, and that probably connected with men-

stration, I ordered a grain of acetate of morphia, in two ounces of distilled water, a teaspoonful to be given every hour. I applied a plaster of opium and camphor to the pit of the stomach, and a plaster containing belladonna with oil of savine and rue to each of the ovarian regions. The pain abated, the patient could eat without impediment, but for some days the pain returned at intervals, notwithstanding four or five teaspoonfuls of the solution of morphia were daily taken. The abdominal pains became more and more intense, and menstruation, paler than usual, appeared three weeks after it was due. The abdominal pains, the leucorrhœa, the two sudden gushes of water, which the patient stated came away from the womb at two days' interval, after very severe pains, induced me to believe that this case was one of menstrual check, by the acute bronchial affection, and that it produced the intense pain of the solar ganglia.

The intimate connexion between the epigastric pain and menstruation was shown at the next epoch. After having suffered for several days from pseudo-narcotism, colics, &c., she awoke one morning with violent pain in the epigastric region, which, after having lasted an hour, went away, and was immediately replaced by intense pain in the dorsal region of the spine; this pain seemed to descend gradually to the sacrum, and then the menstrual flow began. The pain, after this, gradually diminished, and was succeeded by pains in the thighs and knees. The urine was scanty, as it was always during menstruation, and previously it had been very thick.

This epigastric pain was so evidently connected with menstruation that it often came as its prelude; it was a nervous pain, relieved by pressure, and often intense enough to make a strong-minded woman weep. It was of a suffocating nature, and as it may have coexisted with a perfect state of the digestive organs, it cannot have been attributed to them, nor to any spinal affection, to which the patient was not liable. It was a result of deranged menstruation, but it could not be properly called hysterical, since the patient had no hysterical symptoms. Ever since the occurrence of this pain the patient has been liable to a spasmodic affection of the pharynx and esophagus, which she calls "her stoppage."

She will sit down to a meal with great appetite, and all at once will feel as if the food would not go down; and then it stops for a time, or else she is obliged to bring up sometimes the whole dinner, generally a few mouthfuls only, of food or of ropy mucus; after which she will return to table and eat a hearty meal. Any kind of domestic annoyance would bring on "the stoppage," and I have known it last for three days, during which the patient thought that none of the food she attempted to swallow could have reached the stomach.

Cold meat, bread and cheese, very cold drinks, are more likely to make it come on; whereas savoury dishes and warm drinks are usually taken with impunity.

Amongst other medical men, Marshall Hall was consulted; he considered it to be one of spasmodic stricture of the esophagus, and told me that he himself had once suffered in a similar way, and had been sounded by Sir B. Brodie, who had found no cause for alarm. Little did Dr. Hall then think that he was suffering from the cancerous affection of the esophagus of which he died some years afterwards. Since the publication of this case, eight years ago, the patient has been often subject to similar symptoms, but their intensity and frequency have much diminished. The improvement cannot be traced to strong remedies, for steel, quinine, and a host of anti-spasmodics, did no good. This was probably the result of Marshall Hall's experience, for the only thing he advised was, keeping up a daily action of the bowels by aloetic remedies. This improvement is the effect of time, of better circumstances, and of immunity from household cares, for visiting or residing in the country always diminishes the nervous symptoms. I may, however, mention, that when "the stoppage" threatens, it has often been relieved by a glass of very hot ginger tea, or by a teaspoonful of aromatic spirits of ammonia in a little water, or by half a glass of brandy taken "neat."

There is a very similar case in Dumas' work *On Chronic Diseases*. The same temperament and age, the same difficulty of swallowing, epigastric pain and spasmodic contraction of the diaphragm, increased by laughing, and attended by menstruation. Both cases were partly caused by mental distress, lasted very long, and were more relieved by time than by

remedies, although one or two grains of extract of hyoscyamus, given three times a day, did good.

CASES 12.—Maria G., of a sanguine constitution, is now sixteen. She first menstruated at fourteen, but always irregularly, every two, three, or six weeks, and with great cerebral and abdominal pains. On going to Scotland the flow stopped for four months, and without any other cause, she was taken with a violent pain at the pit of the stomach; the pain returned two or three times a week, and though at times less intense, was constant. It was described as a gnawing pain, worse from sitting upright, or from walking. The tongue was clean, the bowels regular, and appetite variable. These symptoms disappeared by the use of sedatives, and on setting right the menstrual function.

Isabella B., a healthy-looking girl of eighteen, after sudden suppression of menstruation, first felt, twice a day, faintness in the epigastric region, and then a violent pain in the same part. This was relieved by lying down, and by vomiting. She brought up mucus, and then began to eat again, for her appetite was keen.

S. E., aged twenty, a delicate girl, in whom menstruation was regular, except at the last epoch, when, instead of the menstrual flow, there came violent epigastric pain, increased by pressure, by moving, or by eating. She vomited clear water; the breasts were painful.

A case is related by C. M. Adolphus, *Art. Acad. Nat. Cur.*, Tom. II., of a woman, who, after two years of imperfect menstruation, became subject to periodical cardialgia, recurring immediately after taking food, lasting for two hours, and sometimes producing syncope. Many plans of treatment were ineffectually tried, and the patient was at last cured by repeated bleeding from the saphena vein and foot-baths.

I mentioned that in one case the patient was three days without being able to eat, and Pomme says, that a patient of his remained seven days without eating, owing to spasm of the esophagus, which fortunately disappeared after a fainting fit. Pedelaborde relates, that a patient, aged thirty-two, suffering from chronic uterine disease, amongst other hysterical symptoms, could not eat the smallest quantity of food without causing suffocation and vomituration, so that she

dreaded the time for taking food, although abstinence was very painful to endure, as in my cases. It appears that there is a case recorded in the Memoirs and Observations of the Medical Society of Edinburgh for 1718, of a young woman, who, losing her father while menstruating, was suddenly seized with an impossibility of swallowing, convulsions occurring whenever she tried to do so. She is said to have died on the fifty-fourth day of this abstinence from food, but nothing abnormal was detected in the esophagus.

Sir B. Brodie also speaks of two ladies, subject to the ordinary symptoms of hysteria, in one of whom, the slight pressure of the finger on the precordial region, brought on a paroxysm of suffocation and constriction of the chest, while, in the other, the same act caused convulsions similar to those of chorea.

My next case will illustrate other ganglionic symptoms, as they occur in lactation ; for the similarity of symptoms point to a common origin, to the disturbance of ovarian nervous energy, reacting first on the *cerebrum abdominale*, then on the brain.

CASE 13.—Elizabeth H., aged thirty-two, tall, thin, with a sallow complexion, brown hair, and hazel eyes. After twelve months of pseudo-narcotism, first menstruated at fifteen, and continued regular every four weeks, suffering little in the back, but much in the head. She married at twenty-two, has been pregnant eleven times, and miscarried seven, from some slight emotion. When admitted to the Dispensary, on the 12th of October, 1851, she had been confined two months, and had plenty of milk. She complained of an epigastric “sensation of weakness, but not downright pain.” It sometimes lasted the whole day—sometimes only came before or after meals, it was not increased by worry. She felt in the throat a sense of stoppage and a choking feeling, particularly on taking liquids ; but she did not retch. She was heavy, stupid, forgetful—and inclined to sleep. Sometimes she had fits of laughter or of crying, and although in every way comfortably off, she was distrustful of everybody, and very jealous of her husband—circumstances quite contrary to her usual character. I ordered the compound camphorated mixture, as in the previous case, a belladonna plaster to the

pit of the stomach, and as much food as she could take ; but the symptoms remained the same, until the child was weaned. This woman was in a perfectly sound state of mind and body previous to her confinement, but after strange epigastric sensations, experienced the first symptoms of insanity, and I have often seen this to occur.

Dr. J. Conolly considers that insanity, so frequently brought on by lactation, is merely the result of weakness consequent on poor diet. I have so often seen *impending* insanity in nursing women, who were well fed and seemingly in good health, that in such cases, I believe, mental derangement to be a result of a morbidly affected ganglionic nervous centre reacting on the brain.

Several cases of cardialgia occurring at cessation, will be found in my work *On the Change of Life*.

CASE 14.—The following case will throw some additional light on the question :

Paul D., aged twenty-five, short, sturdily built, with blue eyes, fair hair, and sanguine complexion, is a butcher, and was admitted at the Farringdon Dispensary on Sept. 2, 1852. He had always enjoyed good health, until two years ago, when, after drinking hard, he felt a sort of beating at the epigastric region, then a violent palpitation, followed by swimming and strange sensations in the head, great prostration of strength, and he was obliged frequently to lie down. He did not foam at the mouth and bite his tongue, and was quite conscious ; but felt as if his strength was leaving him. Ever since then the fits have returned, every week or every month, always beginning by the strange sensation at the epigastric centre, and followed by palpitation. At all other times the action of the heart is natural. There was no sign of bodily ill-health, but he looked anxious, and carried his head as if a heavy load were on it. The pulse was weak, the debility great. I gave him the compound camphorated mixture, ordered every other night a pill composed of three grains of blue pill and extract of henbane, and a pitch plaster on the pit of the stomach. I thought the man exaggerated his state, but having witnessed one of the attacks, I entered more fully into his case, and in addition to the mixture, prescribed a large belladonna plaster to the epigastric region, and

two pills of sulphate of iron to be taken three times a day, after meals. After a month's treatment, he looked a different man. He suffered no more from cerebral fits, but still felt after meals great fulness at the pit of the stomach, and a pulsation there, which made something rise, and a little food was quietly brought up. On leaving off the steel, there was a marked return of the nervous symptoms, which again abated after he had taken the steel for a few days.

THERAPEUTICAL INDICATIONS OF CARDIALGIC SYMPTOMS.

1. To treat the case by local applications, as well as by sedatives internally given, whenever the patient complains of a "fainty feeling," or "of sinking at the stomach," or "of having no inside." In such cases I prescribe either a pitch plaster, or a belladonna, or opium plaster, or one made so as to embody from five to ten grains of opium and the same quantity of camphor to the square inch. Such applications to the epigastric region are so often said by the patients to give great relief, that I believe that sedatives thus applied to so important a centre of nervous force must be worthy of an extensive trial.

2. To ensure the right performance of menstruation during the reproductive part of woman's life.

3. To relieve the oppression of the internal organs, brought on by cessation. The dry skin and hot flushes require sudorifics. The bowels may require repeated purgation.

CHLOROSIS.

This has been already alluded to as a disease of the blood, brought on by a neuralgic affection of the ganglionic nervous system, a statement previously made by Jolly of Paris. I believe it to depend upon deficient and perturbed ovarian action—an assertion difficult to prove from post-mortem examinations: nevertheless, Raciborski observed, in the case of two chlorotic girls, who died between the ages of sixteen and seventeen, the Graafian vesicles, though as numerous as they should be at the period of puberty, were of extremely small size; and in eight young women, in whom the imperfect establishment of menstruation coincided with consumption,

Dr. Dusourd found the ovaries softer and smaller than usual, as if withered; and in two out of the eight they contained tubercles. Chlorosis and amenorrhœa, although often coinciding, are not synonymous, since in some cases of chlorosis the menstrual flow is scanty, and at others abundant. Those who have been subject to chlorosis, may relapse during pregnancy, but it seldom originates during that state. Women, at the change of life, often present many of the symptoms of chlorosis, the blanched skin and conjunctiva, the weak pulse, and sometimes palpitation and bruit de diable in the carotid arteries. Chlorosis is often accompanied by the local ganglionic symptoms previously described.

* THERAPEUTICAL INDICATIONS OF CHLOROSIS.

1. To investigate the patient's hygiene, and her mental and moral, as well as her physical condition.

2. To treat this defect of the vegetative process by the local applications already mentioned, to the known centre of vegetative power—the solar plexus.

3. To give tonics and ferruginous preparations, bearing in mind, that more good is effected by changing the preparation than by considerably augmenting the dose of the same.

My plan of treatment does not differ from that generally prescribed, except, that I think it well to begin by producing a decided shock on the nervous system of nutrition by an emeto-cathartic and then to give steel and bitters; but if I find that the appetite does not improve, and that the bowels remain sluggish, I put aside steel and bitters, and seek to break in on a perverse concentration of forces by giving another emetic. If emetics act so powerfully in such cases, it is by lowering the intensity or modifying the mode of distribution of the innervative force; but even if this explanation be not admitted, I feel assured that if the plan were followed, the treatment of chlorosis would not require so long a period as it frequently does. My practice is confirmed by that of Dr. Burslem, who states that two or three emetics administered in the incipient stages of phthisis, when followed by iron and cod-liver oil, have been the means of

restoring the menstrual function to regular action, and of arresting the disease.

ON THE INFLUENCE OF MENSTRUATION ON CALORICITY.

The ganglionic symptoms hitherto described are indicative of a concentration of vital energy in the internal organs, and are often accompanied by chills and slight shiverings, as in the first period of active hemorrhage or intermittent fever ; but, as with these, a period of reaction soon comes on, and then women suffer from heats and flushes.

HEATS AND FLUSHES.—Girls, before, and long after puberty, are little troubled with these symptoms ; they belong to the fully-grown woman, and then often occur with menstruation, with menstrual irregularities, with ovarian, or with uterine disease, in which case, the patient often gets complimented on her good looks by superficial observers.

Practitioners will remember how often pregnancy increases the heat-generating powers of women. One patient told me, "When in the family way, the coldest weather is too hot for me." It is, however, at the change of life that women suffer most from heats and flushes.

With the exception of a few cases in which the perspirations were cold and clammy, this exhalation is associated with an increased production of heat, and with that irregular distribution of it which is called "flushes." These occurred to 244 women out of 500 ; 14 others were troubled with "dry flushes." The flushes determine the perspirations. Both evidence a strong effect of conservative power, and, as they constitute the most important and habitual safety-valve of the system at the change of life, it is worth while studying them, though they have not hitherto been deemed worthy of serious consideration.

It must have struck many, that at the change of life most women have the power of generating a more than usual amount of heat ; they often want less clothing, and even in winter leave their doors and windows wide open. Sometimes, however, instead of being regularly distributed, this caloric bursts forth as flushes, the starting point of which seems to be in the epigastric region, for women feel as if something

started thence, spread over the chest, or more frequently over the face, which becomes suffused and hot. I have heard women compare their sensations to scalding steam rising from the pit of the stomach. These flushes may be considered as cases of pathological blushing. They sometimes come after a chill, or a momentary sensation of shivering, or after sinking and faintness at the pit of the stomach, but oftener without these sensations. If the flushes do not terminate in a gentle moisture of the skin, women call them "dry heats." The flushes may last two or three minutes, but it will often take a quarter of an hour to carry off the effects of each wave of heat that is wafted to the surface. The number of flushes occurring in the course of the day varies extremely. Their spontaneous repetition, five or six times an hour, either by day or night, is not uncommon to women at the dodging-time. Some months after cessation, they frequently occur only seven or eight times in the day. This may be the case for years after cessation, and even in extreme old age under the influence of worry or ill-health, but then they have not the intensity which renders them so distressing at the change of life. The recurrence of flushes so late in life is not to be wondered at, for woman has been made a blushing creature, and who has not seen women of 60 or 70 blush at the thought of a possible offence to modesty?

The face and chest generally suffer most from flushes, but some other part of the skin may be affected, like that covering the abdomen, or the thighs; "the hands and nails of a lady became like fire," but although the skin was so hot the pulse was often weak and slow. Robust women, of a sanguine temperament, are more troubled with flushes, confirming Sir J. Ross's assertion, that the sanguine temperament has a peculiar power of generating heat, denied to the pale, sallow, and phlegmatic. All molecular actions generate heat, and these actions incessantly proceeding in living bodies must generate heat permanently and continuously, beginning with life to cease only with it. The quantity and quality of this heat varies with the quantity and quality of the blood, which is the fuel of the animal combustion, so that if the blood be in a healthy condition, the heat is physiological; if the contrary, it is the heat of fever. At times it will burst

forth in fitful paroxysms, and as in intermittent fevers, these ebullitions of heat follow a rhythmical march, so I conclude they are governed by that nervous system which holds the blood-vessels and nutrition in its web-like grasp. There are then *nervous* bursts of heat, distinguishable from *chemical* heat. One feels cold before dinner; a few mouthfuls of solid food are taken, and sensations of warmth are produced, not to be explained by the assimilation of yet undigested food; that is *nervous* heat. When the food turns into chyle, passes into the blood and becomes the pabulum of the chemical actions of nutrition, there is a marked increase in the amount of *chemical* heat.

Blushing exemplifies nervous heat. The mental portion of our being first receives an impression, and instantaneously communicates it to the emotional; then follows the sudden reaction on the epigastric region; a momentary concentration of force takes place, during which the skin is somewhat paler and colder than usual, there is almost an imperceptible sigh, a glow is felt at the precordial region, a sudden something seems to rush forth from the epigastrium, swift as a flash of lightning, and then wave after wave of blood is poured in burning streams to the whole surface, or only to the neck and face, which appear a living blaze of blood. The heat passes off, and the blood retreats from the capillaries, resuming its slower course, unless the emotional feelings become once more aroused. Thus, in the physiological phenomena of blushing, heat is evolved by the reaction of emotion on the voluminous ganglia and plexus of ganglionic nerves situated at the pit of the stomach; but what this nervous centre does under the influence of emotion it also does *spontaneously*, causing pathological blushing—the heats or flushes to which women are subject at the menstrual periods, during pregnancy, and lactation, but chiefly at the change of life; in fact, whenever the ganglionic nervous system is called upon for increased action. This confirms the assertions of the oldest physiologists, for Hippocrates noted shivering and an unusual development of caloric to be a sign of conception, Galen considered the reproductive organs to be a source of caloric for the system, and Brongniart discovered that even in plants, reproduction is attended by an

appreciable increase of their usual temperature, and there is developed a higher degree of temperature in the anthers of the *Victoria regia*. Valentin, however, states that menstruation has no influence on the temperature of the vagina.

The influence of the ganglionic nervous system in the distribution of animal heat has been experimentally shown by one of the most eminent physiologists of the day. Claude Bernard found that the section of the sensory and motor nerves was not followed by any increase of heat, but on dividing the nerve by which the superior and inferior cervical ganglia communicate, and thus preventing the influence of the great sympathetic nerve from proceeding to its central ganglia, great heat was developed in the capillaries above the point of section of the inter-ganglionic nerve. These experiments have been repeated by Dr. H. Jones, who observes, that the division of a sympathetic nerve causes the blood-vessels within its range of distribution to dilate, the pulsation of the arteries to become more energetic, and the temperature to rise as much as 10° and 15° . Something similar occurs at each reproductive crisis when there arises a partial paralysis of the sympathetic nerves leading to hyperæsthesia, elevation of temperature, increase of secretion and absorption. Flushing, like a fit of ague, has a period of concentration, a hot stage, and one of perspiration; but, as in ague there is often no first stage, so flushing frequently comes first, and often, without any previous congestion of the capillaries, perspiration is seen continually oozing out of the skin, where it stays until it is wiped away or rolls off. Why continued perspirations are so frequently met with at the change of life, and how they preserve women from worse evils, will be understood by those who are acquainted with the physiology of the skin.

Besides this partial increase of heat, Stahl, Bordeu, and Lordat have observed menstruation to be accompanied by shivering fits, paleness, stiffness of the limbs, in fact, by all the signs of active hemorrhage and fever. I have seen first menstruation preceded by these symptoms; they are also sometimes met with at the change of life. When occurring during regularly established menstruation, they are most likely caused by some serious disturbance of the ovario-uterine organs. Dr. Julius, of Richmond, related to me a

case which illustrates this, as well as several other points of the pathology of menstruation :

CASE 15.—A young lady, aged seventeen, born in India, well grown but anæmic, full of vivacity, but not hysterical, menstruated at eleven, has regularly done so, and has led a life of fashionable dissipation. For the last four months menstruation was regular, but very scanty, attended by habitual pain in the ovarian regions, and loss of power in the spine, with spinal pain ; and for many months, every other menstrual period was preceded by symptoms of low fever ; the tongue became dry and black, and the motions dark, tarry, and foetid, although the bowels were kept regular by aperients. As soon as menstruation appeared, all these symptoms vanished.

This was an exaggeration of the slight febrile movement which so often attends each epoch, and is another instance of a too great ovarian influence on the spinal cord. Under steel and quinine the patient got well, but was soon after much troubled with palpitation.

There was under Dr. Jenks, at the Sussex Hospital, in 1849, a girl, aged nineteen, who had never menstruated ; but for three or four monthly periods there had been decided attacks of fever, lasting about three days. These ceased under treatment, but the catamenia did not appear.

CASE 16.—Mr. Harvey asked me to see Miss B., a young lady of nineteen, with a pale face and dark hair ; she had always been delicate, and had menstruated for the first time three months before I was consulted. Six weeks afterwards she again menstruated so abundantly for twelve days, that the bed was saturated, and large clots were frequently passed. She was lying on her back, the face was waxy and had a typhoid expression, and when roused there was little life in the eyes. When asked to show the tongue, it was protruded, remained between the teeth, and was brown and dry. The breathing was anxious, the pulse weak and at 120 ; the skin was warm, the kidneys acting well, the bowels were regular, and the abdomen could be pressed without giving pain, which came on by paroxysms, and was often relieved by passing a blood-clot. Convulsions occasionally supervened. Ergot of rye had been ineffectually given with cold lemonade. I ordered

injections with opium and hyoscyamus to be given by the bowel, and to be repeated in proportion to the intensity of the nervous symptoms, tepid poultices well sprinkled with laudanum to the abdomen, mustard poultices to the thighs, a stimulating mixture and cold wine and water to be taken. I thought the patient would die, but the opiates abated abdominal pain and stupor. The bowels acted, the tongue cleaned, appetite became ravenous, and the flow stopped; strength soon returned, but since this attack there is strabismus.

COLD SENSATIONS.—I have mentioned the chills and shiverings that usher in menstruation, conception, quickening, pregnancy, and cessation. The perspirations are sometimes cold and clammy. A patient of mine has been pregnant three times, and always knew she was so by an intensely cold feeling in the abdomen, which lasted three or four months.

Another lady, a martyr to uterine disease, has often complained of a very distressing sensation of cold at the lower part of the back and sacrum. I was not able to relieve it by the strongest stimulating applications, nor even by having the part ironed with a well-heated flat iron.

CHAPTER V.

Hysteria is the key-stone of
mental pathology.

CEREBRAL SYMPTOMS.

NOTWITHSTANDING all that has been written about the brain, we know very little concerning its functions and its pathology. Its complicated structure bears evident relation to its most complicated phenomena; but of the connexion of its special portions with its special faculties we know scarcely anything. Leuret has shown the utter absurdity of the phrenological interpretation of the surface of the brain, and its central portions are like the old maps of Central Africa, a perfect blank. Again, why should an organ which has so little fluid to secrete receive so prodigious a supply of blood? Doubtless to furnish the required phosphorus, and otherwise to repair the mental wear and tear: but probably this blood intensifies the imponderable nervous power centred in the brain. This may not be a fluid *analogous* to electricity, but without the admission I can understand nothing of the cerebral functions. As what relates to the brain is so obscure, it is not surprising that there should be great laxity in the interpretation of cerebral symptoms, and in their nomenclature. Many distinct cerebral states are confounded under the traditional name of Hysteria, and sometimes one and the same condition is described under a variety of names. Neither am I the first to deplore that this should be the case, for Sir H. Holland has observed that the difficulty of getting a correct nomenclature for morbid sensations applies particularly to the head.

The influence of the ovario-uterine organs on the brain and on the mind is unanimously admitted; likewise that this influence is often morbid; and I have shown that the reproductive organs may react on the brain by the medium of its ganglionic nerves, and in virtue of a force derived from that

nervous system. This influence varies, being made up of symptoms opposed in their nature, or only analogous. The difference of cerebral symptoms may depend either upon a variable intensity of the ovarian nismus, or upon the reaction of the same on different portions of the brain.

Following Bacon's precept, and beginning my structure at its lowest foundation, I have carefully analysed the influence of the ovarian nismus on the brain, and have found it susceptible of the following classification :

1. Nervousness.
2. Pain in the head.
3. Sick-headache.
4. Pseudo-narcotism.
5. Hysteria.
6. Epilepsy.
7. Insanity.

The annexed table gives an idea of the per centage of the principal cerebral symptoms of menstruation experienced by dispensary patients, when free from all other morbid influences ; but it must be borne in mind that as the patients belong to the lower class of society, it will afford no criterion of the frequency of hysteria at different times of life in women of the highly civilized classes.

1. NERVOUSNESS OR MORBID IRRITABILITY.

I first draw attention to nervous irritability because it is the "materia prima" of all nervous affections, the basis on which they all rest, and the soil in which they grow ; but to speak of nervousness as *hysteria* is to perpetuate the state of confusion out of which the pathology of the nervous system has scarcely emerged. The frequency of nervous irritability at puberty, at monthly periods, as a result of connexion, pregnancy, cessation, and ovario-uterine diseases, is well known. By nervousness I mean that the nervous system is more than usually susceptible to external impressions, such as cold, light, noise, to the stimulus of the internal organs and to that of emotion. There are not only innumerable degrees, but various modes of nervousness. If patients are asked if they are nervous, they always understand the term to mean hysterical, and are often

TABLE III.

SYNOPTIC TABLE OF THE CEREBRAL SYMPTOMS OF MENSTRUATION.

Cerebral Symptoms of Menstruation.	During its Prodroma.	During its regular Establishment.	At its Cessation.	Influence of Connexion on the Cerebral Symptoms.	Influence of Parturition on the Cerebral Symptoms.	Influence of Cessation on the Cerebral Symptoms.
	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)
Headache	30	41	45	Increased 9	28	$\left\{ \begin{array}{l} \text{Increased} \dots\dots 23 \\ \text{Decreased} \dots\dots 10 \\ \text{Same} \dots\dots\dots 12 \\ \text{None} \dots\dots\dots 55 \end{array} \right.$
Sick-headache . .	9	7	12	Decreased 10	1	$\left\{ \begin{array}{l} \text{Increased} \dots\dots 3 \\ \text{Decreased} \dots\dots 6 \\ \text{Same} \dots\dots\dots 3 \\ \text{None} \dots\dots\dots 88 \end{array} \right.$
Pseudo-narcotism	55	40	64	Same 0	18	$\left\{ \begin{array}{l} \text{Increased} \dots\dots 36 \\ \text{Decreased} \dots\dots 10 \\ \text{Same} \dots\dots\dots 18 \\ \text{None} \dots\dots\dots 36 \end{array} \right.$
Hysteria	1½	5	10	None. 81	53	$\left\{ \begin{array}{l} \text{Increased} \dots\dots 7 \\ \text{Decreased} \dots\dots 0 \\ \text{Same} \dots\dots\dots 3 \\ \text{None} \dots\dots\dots 90 \end{array} \right.$
Absence of Cerebral Symptoms .	34	30	15			

N.B. The addition of the numbers in each of the three first columns will amount to more than 100, as many women, being affected with more than one symptom, find places under the respective symptoms.

indignant at the question, though they will readily own that, without being over-sensitive to emotional stimuli, they cannot bear the slightest noise. In some, the temper remains unruffled, but they are ready "to jump out of their skin" at the jarring of a door, and are in agony at hearing the leaves of a book turned over. To some it is torture to hear others converse; others say, that on the most trivial occurrence, they "feel pulses beat all over them;" they "feel all of a tremble, all of a shake;" "my flesh feels so heavy upon me," said one dispensary patient, and "sensation is my calamity, not pain," was the eloquent expression of another; while one could not "stop in church because she felt the people too close." In some there is a tremulousness of many muscles, and the fidgets—the *anxietas tiliarum* of nosologists—are a very frequent expression of nervousness, indicating *nervous plethora*, seeking to be relieved by exercise or muscular action. Although one cannot determine the anatomical conditions of the nerves when they are the seat of nervous congestion, I think it should be admitted as much as the congestion of blood-vessels by blood. The nervous fluid is too subtle to be seen or felt, but the mind can deduce the fact of its being too abundant from the effects produced. Its irregular distribution is apparent in the sensation called thrill, the first-born of emotion, the forerunner of many nervous affections, the analogue of the shiver which precedes fever.

2. PAIN IN THE HEAD.

I mean to imply by this term simple pain unattended by any cerebral phenomena, hereafter to be described; for to repeated inquiries the patient gives but one answer—"Pain." Hippocrates had already observed that towards the approach of menstruation virgins were particularly subject to pain in the head.

With regard to its seat, it may be met with in the following order of frequency: in the temples and the forehead, at the top of the head, and at the occiput. The last-named places have been noticed by Freind, Etmüller, and others as its habitual seat; but I have rarely met with it in the occiput, though, if Gall's localization of the faculties were correct, it should be most frequently found there. With regard to its

nature, it is described as a shooting, a throbbing, a gnawing, a burning pain, or as if the head were in a vice. It varies in intensity from that slight amount which merely inconveniences, to that agonizing pain sufficient to prostrate a hard-working woman, and make her lie by for a few days.

When it occurs on one side of the head, it constitutes the hemicrania of classic authors. The left side is said to be most frequently attacked, but observation leads me to believe that the frequency of the limitation of catamenial headache to one side of the head has been much exaggerated.

Its frequency as a prodromic symptom is repre-

sented by	30 per cent.
As a symptom of fully-established menstruation	41 „
And at its cessation	45 „

B. de Boismont mentions, in general terms, that out of 334 women 168 suffered from headache and twenty-four from giddiness.

Notwithstanding these statistics, I believe this headache to be most frequent at puberty and before cessation. It is sometimes accompanied by noises in the ears, or temporary deafness; more frequently by a failure of vision. This is very seldom permanent, but precedes first menstruation, or each recurring epoch. The eyes show no visible change of condition, but the eyeballs feel sore—the retina feels the light too acutely. I have seen several needle-women and governesses incapacitated by this symptom; and B. de Boismont mentions the case of a girl who was blind every morning for six weeks until the menstrual flow came for the first time.

In another case the pupils were dilated, and there was complete insensibility of the conjunctiva and of the retina, with falling of the upper eyelids during periods of unconsciousness. The same conditions are to be observed in the case of a young lady now under my care, who during a menstrual period, two years ago, lost her father suddenly. She remained unconscious for a long time, and has been blind ever since, although the menstrual flow has reappeared.

Hoffman mentions a prostitute losing her sight for a time whenever she had connexion, and Morgagni cites several cases of women losing their sight during pregnancy, and

recovering it after parturition. Weakness of the eyes and photophobia are well-known signs of onanism, and frequently accompany chlorosis, painful menstruation, and protracted uterine disease. Boyer, B. de Boismont, and Dusourd have seen women almost blind for two or three days at menstrual periods; and I have sometimes met with deafness at those times, particularly in conjunction with pseudo-narcotism. Some few lose their voice at menstrual periods, being unable to sing; and I have elsewhere recorded cases of women who have lost their voices for a time at the change of life. This aphonia is similar to that from which Talma suffered, and which was caused by obstruction of the bowels, the result of stricture. Talma recovered his voice by a full evacuation of the bowels.

Headache may depend on plethora; for a similar headache is observed to alternate with an hemorrhoidal discharge in men. It cannot, therefore, be always ascribed to ovarian influence. Headache has, however, been often found to persist some days after abundant menstruation. It is a frequent accompaniment of a painful or deficient menstrual flow, of amenorrhœa, or of ovarian and uterine disease.

This symptom does not certainly occur in man as the result of the influence of the genital apparatus on the cerebro-spinal system.

THERAPEUTICAL INDICATIONS OF SIMPLE HEADACHE.

1. To cure uterine or ovarian disease, if any exist.
2. To regularize the menstrual flow by stimulants, pediluvia, hip baths, and purgatives, a few days before the menstrual flow is due.
3. To supply the absence of an habitual drain by purgatives, when menstruation is either deficient or absent.
4. To bathe the temples with cold water, or vinegar and water.

3. SICK-HEADACHE.

This is another term which requires but little comment. The patients will admit of no other explanation of their feelings, and they are unconnected with the coated tongue and other signs, which would warrant their being considered as symptoms of gastric disorders. The sickness of such headache varies in intensity, from slight and constant nausea to

downright vomiting, which is of less frequent occurrence, and oftener characterises those attacks of headache which go by the names of migraine and hemicrania.

The frequency of cerebral sickness as a pro-

dromic sign, is	9 per cent.
As a symptom of fully-established menstruation	7 „
And at its cessation	12 „

I know not whether sick-headache in man has ever been traced to the influence of the genital apparatus, but nausea and vomiting are often caused by a blow on the testicle. Vomiting is evidently often induced by ovarian influences ; for, independently of those cases I have met with, wherein it was constantly the principal symptom of menstruation, I may remark that it may be produced by connexion, by conception, by pregnancy, and is not an uncommon symptom of amenorrhœa, ovaritis, and the first period of ovarian dropsy.

THERAPEUTICAL INDICATIONS OF SICK-HEADACHE.

1. The same as for headache.
2. The internal and external trial of the sedatives already recommended, and those which will be described in a chapter on the Gastric Symptoms of Menstruation.

4. PSEUDO-NARCOTISM.

I find a distinct group of cerebral symptoms caused by the ovarian nîsus, which are similar to those produced by narcotic poisons on the brain ; and I apply to this group of symptoms the term Pseudo-narcotism, because, without prejudicing the question, it graphically expresses nervous phenomena, the most intense forms of which are included in the descriptions of Stupor, Sopor, Lethargy, Coma, Hysterical Coma, Hysterical Somnolency, or Hysterical Apoplexy. This condition has been described by Bouchut as Acute Nervocism, assuming a typhoid form ; and as “Fausse Dothînenterie” by Beau.

Those who have had much practice in the diseases of women will remember that previous to puberty, and during the suppression of menstruation, or the dodging-time, the patients complain of “a dimness of eyes,” of “a heaviness in the

head," "a stupid feeling," "a lump in the head," a senselessness," of "a stupid headache," of "feeling heavy for sleep, but without pain," of "the possibility of sleeping anywhere," of "an unconquerable sleepiness, amounting sometimes to stupor." Thus, E. N. could not sit down a moment without sleeping. These sensations sometimes coincide with a sense "of forgetfulness," "of feeling lost and bewildered," "of a temporary loss of wits," "of the fear of going mad." I recal the sense, although I mar the force, of the expressions by which women show that the ovario-uterine organs have a specific influence on the cerebro-spinal system. It is so true that the peculiar state I have described resembles the influence of narcotic poisons on the brain, that when women of an advanced age experience flushes, and have an uncertain gait, or drunken eye, they are frequently, although in most cases erroneously, accused of being fond of drinking—the best proof of the aptness of the term proposed. Slight shades of the peculiar state indicated by these expressions, are the most frequent symptoms of menstruation, and when intense, they often constitute the principal peculiarity of disturbed menstruation at puberty and at cessation. Girls previously lively and clever become stupid, and when sent on a message frequently forget what they were sent for, or how to come back; when at home, they will frequently let things fall out of their hands, and if they stoop to pick them up, they often fall down themselves. Suppression of the menstrual flow is a frequent cause of pseudo-narcotism. Its intensity varies according to the temperament of the subject, and the force of disturbing causes; and should they suddenly act with extreme energy, the result may be a state of coma, of nervous apoplexy, ending in death.

N. G. could almost sleep while walking at the menstrual periods, and once remained sixteen hours in a state of stupor, from which she woke quite well. K. R., at the menstrual period, would remain for hours in what she called her "quiet fit;" a state of self-absorption and total inactivity of the menstrual functions, unaccompanied by hysterical phenomena or by convulsions. C. B., when six months pregnant, after sickness, went off into "an unnatural doze."

At cessation, the loss of memory is sometimes a most dis-

trressing symptom. Patients forget where they have put things they are in the habit of using, such as keys, &c.

The frequency of pseudo-narcotism as a prodromic symptom, is	55 per cent.
As a symptom of fully-established menstruation	40 „
And at its cessation	64 „

Such are the gradations of pseudo-narcotism. While its minor cases have escaped observation, many have noted its existence in extreme instances. Thus B. de Boismont relates, that for a whole year previous to menstruation, a patient of his would sometimes be plunged in a state of abstraction, and remain immovable, with eyes fixed on vacancy; and that when her senses returned, she would take up the thread of the discourse where it had been broken off by her attack. The symptoms disappeared of themselves when the menstrual flow became regular. The same author mentions the case of a girl, who, for the three or four months previous to the first appearance of the menstrual flow, became idiotic, but resumed her intelligence after menstruating. The same symptom—*stupidity*—is sometimes carried to an extreme height in chlorosis. Dr. Sandras, of Paris, has very justly insisted on this point, and given instances of its occurrence in both married and unmarried chlorotics. Pseudo-narcotism is often very intense when the menstrual flow is either very painful, deficient, or completely absent. I have known, in a girl of twenty-one, intense pseudo-narcotism, caused by amenorrhœa, mistaken for an idiopathic affection of the head. Her head was shaven, and she was bled and salivated, to the ruin of her constitution.

Dr. Villartay de Vitré has made known—*Union Médicale*, Tom. V., No. 40—a curious case of lethargy occurring regularly every month in a girl suffering from amenorrhœa, the attack lasting seventy-three hours. When the menstrual flow was re-established, the lethargic state disappeared.

With respect to the period at which these symptoms occur, I have been surprised at finding them sometimes appear very early, and unexplained by other causes. Thus I have found them in girls of eight or nine years of age, though first menstruation may be delayed to fourteen or fifteen; and in this

I am confirmed by Landouzy, the author of the best work on hysteria, who says that he also has sometimes observed symptoms indicating the influence of the generative organs upon the nervous system long before first menstruation, and even before the little girls had *any idea* of sexual subjects.

Sometimes pseudo-narcotism amounts to coma at menstrual periods, and may be preceded by epileptic attacks, or by Eclampsia, which is confounded with Epilepsy. Trousseau has found this form of epilepsy most amenable to belladonna. Dr. Williams, of Aspley Guise, has published—*British Med. Journal*, 1857—an interesting case, in which a highly scrofulous patient, subject to epileptic attacks, became semi-comatose, and menstruated for the first time at twenty. She was at times cataleptic, losing her sight and power of speech.

As regards the intensity of pseudo-narcotism at the cessation of menstruation, I am borne out by other observers. Thus Tissot says: "I have seen one of the most reasonable and witty women I ever knew pass two years of her life at the cessation of menstruation in a constant dream of a calm and gay character like her own habitual disposition. She was at the same time so troubled with the fidgets, that she could only remain sitting for ten minutes at a time. If she persisted in doing so longer her sufferings were intense. Her nights were often sleepless, and remaining in bed was painful to her."

Dr. Teissier, of Paris, has published—*Gazette Méd. de Paris*, 1851—under the name of *Periodical nervous apoplexy*, a case which shows intense pseudo-narcotism associated with temporary paralysis.

CASE 17.—A lady, sixty years of age, since the change of life, has every month, and at the period she had been accustomed to menstruate, been subject to the following attack. She becomes unconscious, and on recovering her senses one half of her body is paralysed, and her speech is affected. These symptoms continue for several days, and gradually disappear, to return at the next monthly period. Being naturally of a calm and tranquil disposition, those about her know when the attacks are coming on by the agitation and restlessness she evinces, and they are never deceived as to the result of this sign.

In some women a high degree of pseudo-narcotism is the immediate consequence of connexion. This was always the case in a patient of mine, during the first year of marriage. Sometimes she recovered from it in half an hour or an hour, sometimes the morbid, would merge into the natural sleep, being followed by headache and prostration of strength during the following day. In this case there is an imperfect development of the clitoris, and her husband has told me that if connexion takes place without orgasm, she is sure to be plunged in a state of unconsciousness for hours, but that nothing of the kind occurs when connexion takes place after complete orgasm. From which it may be inferred that the pleasure attending procreation is not only intended to perpetuate the human race, but to induce such a condition in the nervous system as may render connexion innocuous.

If married women are sometimes made unconscious by connexion, it is easy to understand why stupor is a frequent symptom of first connexion and of rape. This stupor permitting the repetition of the crime, and accounting for death, which is the result of a shock to the nervous system, which is not only mental and moral, but also physiological.

During pregnancy the milder forms of pseudo-narcotism are frequent. The heaviness of head, the dulness of intellect, the giddiness, the tendency to fall, are often erroneously considered symptoms of plethora, and used formerly to be treated by venesection, which was evidently erroneous; for, as Caseau says, true plethora is very rare during pregnancy; and Andral and Gavarret have found the blood during pregnancy to be similar to that of chlorosis.

S. C. always knew herself to be pregnant by feeling heavy in the head, giddy, and by very sleepy sensations, which increased as she increased in size. In P. N. there was no pseudo-narcotism at the menstrual epochs, but much during pregnancy.

With respect to the more intense amount of pseudo-narcotism, Mr. A. Hunter—*Annals of Medicine*, 1799—Mr. Blake, and Dr. Montgomery—p. 151—have cited cases where pregnancy was accompanied by very great drowsiness; and in Dr. Montgomery's case the patient's memory during the whole time of her pregnancy was a perfect void. Dr. Reid

relates an interesting case of a woman, who, after she had been married nine years, when pregnant of her last child menstruated regularly until she quickened. This woman was always able to judge pretty correctly of the time of conception by a peculiar sensation of drowsiness, attended by sickness, which then affected her.

The milder forms of pseudo-narcotism are amongst the common symptoms of over-lactation.

The relations between cardialgia and eclampsia are well given by Burns, who says, "In some cases, the first indication is a violent pain in the stomach, with insupportable sickness; and the patient may die before convulsions take place." He also observes, "I have seen distinct cases of eclampsia, where the fits were very severe and repeated, and accompanied in the interval with coma, or delirium, caused by menstrual irritation, attended by severe pains in the hypogastrium and bearing-down sensations."

Baudelocque mentions that women about to be taken with fits of eclampsia were thought drunk by the unexperienced; and although this disease may appear without prodroma, still heats and flushes, giddiness and bewilderment, are often the precursory symptoms of intense coma.

When, in addition to other hysterical symptoms, there is a partial or a complete loss of cerebral power, unexplained by cerebral hemorrhage, it has been very frequently called hysterical apoplexy. This is only met with during the most active portion of reproductive life, and during the monthly crisis of ovarian activity. Thus the sudden suppression of menstruation, when the sexual organ is in the highest state of power, and the nervous system similarly excited, sometimes gives rise to a sudden shock, the brain is struck as if by lightning, the patient is plunged into a state of apoplectic coma, and when a post-mortem examination is made, there is found a congestion of the cerebral vascular system. Hysterical coma requires illustration. A striking case is given by Mr. Whitehead—*Lond. Med. Gaz.*, 1847:—

CASE 18.—A young woman in respectable circumstances, nineteen years of age, had menstruated regularly since the age of sixteen. On the day when, according to her own calculation, menstruation should have returned, death

deprived her of an affectionate friend and guardian ; she had experienced the usual premonitory symptoms, but the menses did not appear. This failure was attributed to the fatigue and anxiety which she had undergone. Two days afterwards, during an angry altercation relative to deceased's property, the menses being still absent, she was seized with palpitations and syncope ; from which, however, she soon recovered. Thirty hours later, having suffered severely in the interval from headache and languor, she was seized with violent hysterical convulsions, accompanied with a sense of choking. This first attack was said to have lasted several minutes, and to have left her extremely languid, but sensible. After a short interval the convulsions returned with increased severity, and continued to recur in quick succession. In a few hours the patient was found to be totally insensible.

When she was first seen nine hours after the seizure, the features were tranquil, and of a leaden paleness ; the eye was closed, and free from vascular turgescence, the pupil widely dilated ; the teeth were firmly clenched, and the tongue protruded partially between them ; the breathing was noisy, but not hurried or stertorous ; the pulse, beating seventy-two in the minute, was full, but not free. Whilst prosecuting the inquiries, a violent paroxysm of tetanic convulsions came on, implicating, principally, the muscles of the abdomen, and, less powerfully, those of the thighs, legs, and arms ; but producing scarcely a perceptible change upon the expression of the face. The abdominal muscles in the supra-pubic region were gathered into the form of a circumscribed tumour, the size of a child's head, which became a little, though but very slightly, diminished by evacuation of the bladder with the catheter. This circumstance created a momentary suspicion of the existence of pregnancy, but examination per vaginam immediately cleared up the doubt ; the os uteri being small and linear ; its lips smooth and even ; and the whole organ light, loose, and of the unimpregnated size. Moreover, the tumour in question, losing its circumscribed character as the spasm subsided, soon merged in a diffused fulness of the whole hypogastric region, in which state the parts remained during the rest of the quiescent interval. Notwithstanding bleeding and other active measures, her symptoms acquired

more and more the apoplectic character; the pupil was insensible to light, and dilated to a mere ring; the breathing became more laboured and stertorous, and the mouth frothy. The convulsions ceased about two hours before the moment of dissolution. She died twenty-four hours after the first convulsive seizure.

On a post-mortem examination the cerebral veins and sinuses were found distended by blood; the thoracic and abdominal organs were healthy. The os uteri was a third of an inch in length, and completely closed; the labia were of the ordinary dimensions, and free from congestion. The body of the uterus was turgid: its right half, both anteriorly and posteriorly, was deeply injected with blood, offering a striking contrast with the opposite half of the organ, which was pale; its mucous lining presented a beautiful arrangement of its vascular capillaries, which were finely injected with what would appear to be a slightly coloured serum, giving the most delicate rose tint that can possibly be conceived.

The whole plexus of vessels approaching the uterus and Fallopian tube, enclosed between the folds of the broad ligament, were, on the side corresponding to the turgid moiety of the uterus before noticed, distended with blood; the great mass of them was observed to take a course parallel to the Fallopian tube, but they were connected together by innumerable cross and oblique branches, the whole forming a crimson band of network, about an inch and a quarter in width, extending between the ovary and the uterus. The Fallopian tube and fimbriated extremity on the same side were highly turgid, of a deep crimson colour, and appeared as if consisting entirely of an aggregation of injected capillaries. On the left side the vascular turgescence was less considerable, being confined principally to the outer extremity of the Fallopian tube and the adjacent parts. The ovaries were greatly enlarged; both were covered with cicatrices, beneath some of which were remains of yellow bodies in different stages of decadence. The left presented, at its upper part, a Graafian vesicle, which appeared to have arrived at a state of development beyond what is generally considered maturity. It was elevated to at least five-sixths of its entire dimension above the surface of the ovary in which it was imbedded; and

through its transparent walls the yellow germinal spot could be distinctly seen. Trunks of vessels of extreme minuteness, emerging from the surrounding stroma, mounted upwards upon the walls of this vesicle, subdividing into a multitude of smaller ramifications, some of which could be seen only by the aid of a powerful magnifier.

I will extract another case, from Dr. Tweedie's *System of Practical Medicine*, Vol. IV. :—

CASE 19.—A young lady who had for some time been hysterical was attacked by peritonitis, from which she was not relieved by depletants ; the pain subsided spontaneously, but soon after cerebral disorder arose. One day she exclaimed suddenly that flames were rushing to her brain, and fell down dead. On inspection, it was found that the cerebellum was pale ; the cerebrum and its membrane slightly injected. The right side of the heart was completely gorged with blood. On the left side, however, not only was the ventricle quite empty, but spasmodically contracted ; and this was looked on as the active cause of death. A rope of mucus hung from the os uteri. The Fallopian tubes were dark with black blood ; several Graafian vesicles were ready to burst ; the hymen was entire. A similar case is mentioned by Dr. Bright ; the source of irritation being a calcareous deposit in the fimbriæ.

Dr. Rullier relates that a girl of fifteen died the second day after violent hysterical attacks, brought on by suppression of menstruation from fright. Engorgement of the vessels of the brain and slight inflammation of the ovaries were the only lesions found. This case is in many points similar to that of the Venetian woman, who died in the midst of hysterical convulsions, and was opened by Morgagni. The most recent case with which I am acquainted is one which was under Louis's care at the Hotel Dieu of Paris.—*Gaz. Méd. de Paris*, 1846. On opening the body no cerebral lesions were found to explain the hysterical attacks and hemiplegia ; but the ovaries were subacutely inflamed, engorged, and lardaceous ; the Fallopian tubes were acutely inflamed, and contained pus, of which there was a quart in the peritoneal cavity.

Many practitioners will class, with these cases, those of women dying in puerperal convulsions, although the pheno-

mena are modified by the peculiar state of the nervous system and of the vital fluids during the puerperal epoch.

It is a curious fact, that most of the women who have been nearly buried alive were said to be hysterical. This was the case with the woman, in whom coma was mistaken for death, and who would have been buried but for Asclepiades. She was a cataleptic patient, in a state of coma, who was thought dead, and was awakened from the trance of coma by the scalpel of Vesalius. Lepois postponed the funeral of a nun, who was both hysterical and cataleptic, and she came to life; and Lancisi relates that an hysterical young woman returned to life while the funeral service was being chanted over her. Pomme met with coma, occurring every month, instead of the menstrual flow; and he says he has repeatedly prevented similar patients being buried alive. It should also be noticed that in the phenomena of *incubus*, as exhibited in history, is seen the too strong reaction of the genital sense on the epigastric ganglia. In Pagan times it was thought that Fauns came at night and abused those suffering from incubus. In the Middle Ages, witches thought devils had connexion with them, and saints that they were under satanic influence; and now, in our asylums, are found lunatics who believe that the devil has crept into their wombs.

Such are the facts which led me to introduce the term *pseudo-narcotism* to express a state of the nervous functions which has been only partially alluded to by those who have written on hysteria and cephalalgia, and which will never be duly appreciated until, distinguished by a *name*, it receives a local habitation amongst recorded facts, for what have the phenomena described to do with hysteria? There are some who have the pretension of being practical men, who eschew theory altogether, as if both were not indispensable. Those who assume the credit of being only *practical men* should remember that they affect what is impossible, and that if they will not think for themselves, they must borrow from bygone theorists a staff to lean on, a thread to guide them. Having given the facts relating to pseudo-narcotism, I must now seek to interpret them, or, in other words, theorise, for a good theory may prevent chlorotic or pregnant women being injudiciously bled for symptoms similar to some of those of plethora.

Pseudo-narcotism may be interpreted by—

- I. Cerebral disease.
- II. Plethora.
- III. Anæmia.
- IV. Biliary derangement.
- V. Toxæmic effects of retained menstrual secretion.
- VI. Ovarian influence over the nervous system.

I. CEREBRAL DISEASE.—If told that I have merely observed some obscure cerebral disorders depending on slight irritation of the brain, or its membranes, and which become more frequent at an advanced age in both sexes, I should answer that pseudo-narcotism occurs more often without, than with signs of cerebral congestion, such as injections of the eyes and face, that it occurs independently of hemiplegia, that in cases of well-marked cerebral disease I have noticed no corresponding increase of pseudo-narcotism, and that in several cases of long-continued epilepsy it was totally absent. If I had merely described idiopathic cerebral disease common to both sexes, it would be continuous, and would not adopt the periodicities of the menstrual function;—besides, it is right to give some credence to the evidence of women themselves, when at cessation, they, of their own accord, describe their cerebral sufferings as similar to those they experienced when the menstrual flow was stopped, or to those they were afflicted with previous to its first appearance. On the other hand, when coma occurs as a symptom of cerebral tumours, or of acute inflammation of the brain, it is associated with paralysis, and with other signs of morbid action. I have seen pseudo-narcotism in a nervous young man, aged 22, who was much troubled with spermatorrhœa, and Dumas gives a case in which pseudo-narcotism and spermatorrhœa were associated. In the following case I could not trace the nervous symptom to a sexual origin:—

CASE 20.—C. I., a printer, aged twenty-six, applied for relief at the Farringdon General Dispensary, March 4, 1850. He was tall and thin, he stuttered and squinted, but was of a healthy family, and had enjoyed good health until seven months back. He was taken with pains in the head, not acute, but heavy pains, with vertigo and excessive drowsiness

sometimes in the morning, but mostly after meals, and in the evening. Being a pressman, and therefore exercising his muscles more than his brain, his work rather relieved his head than otherwise. This lasted for two months, when he was taken with epistaxis whenever he touched his nose. At St. Bartholomew's they gave some mixture, which, or the epistaxis, relieved him; for the last four months, since the epistaxis left him, he has been worse, and never free from drowsiness and forgetfulness. He is a married man, well off, and regular in his habits; he never drinks, but feels in the morning as if he had drunk. He has no tendency to hysteria, no tears, no alarms, no fits, the digestive organs are in a good state, and the sleep sound. I prescribed the same treatment as for women who present the same symptoms, and he was well in a month, but a year after he had a slight return of his sufferings.

II. PLETHORA.—The symptoms described as pseudo-narcotism have many points of similitude with those of plethora and cerebral congestion, which were often so interpreted, and are even now sometimes, particularly when palpitation co-exists. Such symptoms, whether occurring in chlorosis, or in pregnancy, have been often treated by bleeding, but with what sad effects, may be gathered from two cases related by Dr. Dusourd. The fact of the symptoms of pseudo-narcotism being often strongest when the pulse is weakest, shows that it does not depend upon plethora.

As all the nervous phenomena of pregnancy have been referred to plethora, I need not wonder that cerebral congestion has been accounted the cause of eclampsia, but if so, why does not congestion of the brain always cause coma and convulsions? Eclampsia is said to depend on albuminuria, but of those thus affected, how few have eclampsia; so I must seek the cause of eclampsia in the peculiar condition of the nervous system; an exaggeration of that which at all periods of reproductive activity renders pseudo-narcotism so frequent. The brain has been found exsanguineous in some cases, and when congestion is observed, it is the result not the cause of the disease.

III. ANÆMIA.—It has been shown by Gooch and Marshall Hall that drowsiness often accompanies a deficiency of blood

in the brain of little children, and this, as well as convulsions, are known to follow too copious bleeding or floodings. It must be remembered, however, that the skull being incompressible, must be filled with something, and that when too much blood is withdrawn from the system, the brain must then be permeated by blood containing too much serum, and to this we may ascribe the nervous symptoms already alluded to. When pseudo-narcotism occurs as a symptom of chlorosis, or of profuse menstruation, it may be explained in the same way as the nervous accidents after flooding or copious bleeding—by the brain being stimulated by imperfect blood. Very frequently, however, pseudo-narcotism is observed when the tissues present every appearance of health, and when the fluids in circulation seem in exact proportion to the wants of the system. The nervous phenomena cannot therefore be explained by anæmia.

IV. BILIARY DERANGEMENT.—Biliary congestion may give rise to drowsiness, to coma in some rare instances, and even to other symptoms usually called apoplectic; but though, doubtless, pseudo-narcotism is increased by disordered digestion, yet as it persists, after the biliary functions have been set right, and generally coincides with their healthy performance, it cannot be explained by biliary disturbance alone.

V. TOXÆMIC EFFECTS OF RETAINED MENSTRUATION ON THE NERVOUS SYSTEM.—Bearing in mind that the retention of urea in the blood induces coma or epileptiform convulsions without loss of consciousness or both, and struck by the fearful consequences of suddenly suppressed menstruation, producing in some cases delirium, cerebral congestion, and death, many observers, and lately Drs. Todd, Cormack, and G. Bedford, have sought to explain these effects by the toxæmic effects, on the nervous system, of the non-eliminated effete matter of the blood; but as similar symptoms, and all the minor degrees of pseudo-narcotism, are most frequent in the female before first menstruation and after its cessation, and as in the girl before puberty, so in the woman who has passed the climacteric, there can be no retained menstrual secretion to eliminate, the explanation cannot stand.

VI. PSEUDO-NARCOTISM is an effect of the ovarian nismus

on the ganglionic system, and thereby on the brain, and it neither arises from plethora nor anæmia; it is a nervous phenomenon, analogous to those described as ganglionic symptoms in our last chapter, and it is through the instrumentality of the ganglionic nervous system that the brain thus shows its perception of too strong a stimulus of the ovarian nîsus. That pseudo-narcotism is a phenomenon evidently nervous, is confirmed by the fact of its being more amenable to narcotic, than to any other remedies, and the frequent coincidence and inter-dependence of the ganglionic epigastric sensations with pseudo-narcotism is a fact that must not be lost sight of by those who may hereafter follow me in this inquiry.

Before explaining the therapeutical indications of this state, I wish to remark, that if I have satisfactorily shown the frequency of sleep as a symptom of all the phases of the generative function, or in other words, that sleep is produced by the morbid action of the ganglionic system of nerves on the brain, is it not fair to ask, "has the ganglionic nervous system nothing to do with the production of our daily sleep?" Without affirming that sleep is a function of the ganglionic nervous system, I think myself entitled to deduce, from the facts contained in this chapter, that all theory of sleep is false which does not take into consideration the influence of the ganglionic nervous system in its production, and without a good theory of sleep, I do not see how it is possible to understand the functions of the nervous system, and its numerous diseases.

THERAPEUTICAL INDICATIONS OF PSEUDO-NARCOTISM.

1. To cure sexual disease and regulate the menstrual function.

2. To give sedatives and antispasmodics internally.

One might fancy that narcotic remedies would increase pseudo-narcotism, but the contrary is a fact of daily occurrence. In the milder forms of catamenial headache and pseudo-narcotism they alone suffice to cure, and always assist the action of bleeding, of purgatives, and of other remedies which may be deemed necessary. To relieve the cerebral symptoms, which, though cured, so frequently return, I very

seldom make use of opium internally, but give hyoscyamus, the mild action of which permits its being taken longer without producing cerebral disturbance or constipation. I order a mixture composed of a tincture of castor and tincture of cardamoms, of each two drachms, with six drachms of the tincture of hyoscyamus, in six ounces of camphor mixture; a tablespoonful to be taken with a little water ten minutes before every meal, and on going to bed. The proportions of the ingredients may be varied according to circumstances, and that it does good, is proved by the fact, that at the public institutions to which I am attached, I am very frequently applied to by the patients for "some more of the same stuff which did them so much good before." Hyoscyamus is an invaluable remedy in the treatment of diseases of women, whether given according to the preceding formula, or as an extract in pills, or as a topic in plasters. No sedative has so soothing, so harmless an action on the nervous system of women. The extract of conium has been likewise much resorted to at various epochs of medical practice; and, when properly prepared, it is also very useful given in pills, alone or combined with the blue pill. The extract of belladonna is very valuable, for external use, in ointments or plasters. Dr. Physick used to say that "camphor was made for women, with whom it always agrees, while it always disagrees with men." This is somewhat an exaggeration, for I have met with women with whom it disagreed, and it often agrees with men who have an effeminate constitution. I generally prescribe the ordinary camphor mixture as a vehicle for other remedies; but where expense is no object, Sir James Murray's fluid camphor is a good preparation. It is related in an article on the burning of widows, in the *Quarterly Review*, that "the messenger found the Brahmin plying the victim with camphor, and he was wholly unable to overcome the exultation which she exhibited." This proves the knowledge of the properties of this drug by a people, now, in many points, as they were found by Alexander.

To apply sedatives locally. Belladonna, or other narcotic plasters to the ganglionic nervous centre; and to the head, Raspail's camphorated sedative lotion, cold or tepid, whichever the patient may prefer. For cases of stupor re-

sulting from suppression of the menstrual flow, while the patient was unconscious, I have, in addition to other means, rubbed into the scalp Eau de Cologne with as much camphor as it would dissolve. After rubbing it in for a few minutes the patient has come to herself. In a case in which these attacks of stupor frequently followed the epigastric pain, this was the only treatment during the attack. On recovering her senses the patient felt as if her brain were "benumbed," and to this succeeded a sensation of internal pricking, like pins and needles. When this was complained of, I wrapped the head in a turban of flannel, and left the patient to repose.

To be careful with regard to prescribing venesection to chlorotic women, or to those who suffer from suppressed menstruation or from cessation; for such patients generally only offer a slight appearance of plethora, and venesection entails a state resembling chlorosis, or confirms it if it is already produced. Should real plethora cause amenorrhœa, and increase pseudo-narcotism, bleeding from the arm or leg may set all right, but I prefer taking the blood from one of the lower limbs. Bleeding during pregnancy should be avoided, unless pseudo-narcotism be accompanied by a hard and full pulse, or by the symptoms graphically described by Dr. Meigs: "If your patient, in an advanced stage of pregnancy, wake in the morning with her face bloated, her hands and wrists so swollen that she can with difficulty flex or extend the fingers, and this accompanied with pricking sensations affecting the arm as though the member had been asleep, with sickness, pain in the head, or vertigo, you would at once refer such phenomena to their true cause, which is the polygæmic state of the upper part of the trunk and limbs. In the progress of the day, as she sits up and moves about on her feet, the polygæmia ceases, to return upon taking the horizontal posture, and to manifest itself again on the following morning, and so on from day to day. Such a woman ought to be *bled*, because if this hyperæmic condition be allowed to be renewed from day to day for weeks in succession, the vessels of the brain will become habitually surcharged, exposing her to no little risk of apoplexy during her pregnancy, and greatly aggravating her liability to eclampsia, when to an

habitual hyperæmia she comes to superadd the dangerous congestion which coincides with a first, hard, long, laborious labour."

Therapeutical indications of *Hysterical coma*.

a. If the action of the heart and pulse be sufficiently strong to warrant the loss of blood, to try and turn the nervous and sanguineous currents in the normal direction by bleeding from the saphena vein, or by applying from twelve to twenty leeches to the pudendum, and when these have been on ten minutes, to take them off and stop the bleeding, in hopes that the blood-current set towards the leech-bites may be directed to the surface of the womb.

b. The patient being helpless, hip-baths are out of the question, but hot bottles may be put to the feet, and large mustard poultices to the legs and thighs. Stimulating enemata should also be given, containing one ounce of decoction of aloes, and one scruple of oil of savine.

The hypogastric region and inner parts of the thighs may even be rubbed with a liniment containing oil of savine and tincture of cantharides. It is a question of life or death, and nothing should be neglected which can be either suggested by experience or theory.

As soon as the patient can swallow, an additional attempt should be made to bring about or to increase the menstrual flow, by an emmenagogue potion; I have sometimes given the following with good effect:—

Oil of savine	.	.	.	50 minims.
Nitric ether	.	.	.	5 drachms.
Distilled water to	.	.	.	5 ounces.

A tablespoonful to be given every hour.

It is needless to say that I do not in any way participate in the dread of savine generally entertained by the profession, and expressed by several medical men at a late trial. In *ordinary* cases of amenorrhœa, when the patient's strength has been recruited, I have often given ten drops of the oil of savine twice or three times a day, without inconvenience, and sometimes with the desired results.

c. To relieve the pressure to the head when the face is flushed and the vessels turgid, by applying six leeches behind

each mastoid process, and the sedative camphorated lotion made stronger by adding two ounces instead of one of spirits of ammonia to the other ingredients.

Opium in large doses seems to be the most useful remedy in Eclampsia. Gendrin has seen ten or fifteen grains, given in a short interval, have little influence on a child's movements. By whatever name called, the symptoms I have described as pseudo-narcotism, are often met with in little girls of ten or twelve years of age, often before pains in the back and legs indicate the approach of puberty. They are sickly without apparent cause, and from being gay and sprightly they become taciturn and low-spirited, absorbed, forgetful, doing everything wrong, dull at their books, or self-willed and showing temper in various ways. The doctor should not only tell the friends that when formed the child will be better, but so order the hygiene of the case as to promote the healthy establishment of the menstrual function, and see that parents and governesses do not beat, bully, or overwork children, whose intellect is for a time clouded by the approach of puberty.

5. HYSTERIA.

This term has been made the scapegoat of mental pathology, so it is well to carefully specify its meaning. There are two forms of Hysteria—1, the neuralgic; 2, the convulsive.

1. In the neuralgic form there are uneasy sensations in the abdomen, the result of hyperæsthesia of the hypogastric plexus at the epigastric region, caused by hyperæsthesia of the cœliac ganglia; and in the throat, owing to hyperæsthesia of the pharyngeal branch of the vagus. There is also uncalled-for lowness of spirits, involuntary tears, or uncalled-for high spirits, and mechanical laughter, which does not spring from the sudden perception of contrasts. There may be spontaneous vivid feelings of pain or pleasure, with or without change in the moral character. This is hysteria, the hysterical state, the hystericism of Whytt and Willis.

The influence of the generative apparatus on the nervous system is distinctly perceivable in many of the lower animals.

In the beginning of spring, just before the period of copulation, the nervous system of frogs is endowed with a most remarkable degree of irritability. The slightest touch will then produce those states of the nervous system which, at other times, can only be produced by narcotic poisons or by energetic galvanic action. It is a matter of daily observation, that when women are subjected to increased ovarian action during the menstrual epoch, they are also more irritable, more impressible to cold, to noise, and are more liable to spasmodic movements, which indicate a state of tetanoid susceptibility. At each menstrual period women frequently are unnerved by the most trivial circumstances; it is perfect torture to some to hear others converse. I believe that this, and all the phenomena of hysteria included in my definition, are the consequence of undue action of the reproductive organs on the cerebral system, and I refer those who may entertain any doubts on the subject to Dr. Landouzy's work, in which he confirms this opinion by a careful analysis of 350 cases. As I have already abundantly proved that the ovaria are the governing organs of the reproductive apparatus, it is not surprising to find that hysteria is frequent at puberty, and particularly when menstruation cannot be regularly established. I find, accordingly, that 105 out of Landouzy's 350 cases occurred at the ages of from fifteen to twenty. Besides the symptoms alluded to, there is particularly then an estrangement of character, which varies from a peevish, snappish, fretful disposition to that utter impossibility of self-control which would almost warrant constraint. Duchamp and others have seen insanity show itself at this age, and last two or three months. The frequency of hysterical phenomena as a prodromic sign in women of the lower class is $1\frac{1}{2}$ per cent. As a symptom of fully established menstruation, 5 per cent. And at its cessation, 10 per cent.

The smallness of this proportion as compared to that of pseudo-narcotism shows the intrinsic nature of woman's constitution, and that in those whose frame is hardened by labour and exertion the ovario-uterine organs rarely induce hysteria. For them to produce hysteria the nervous system of woman must be wrought up to an artificial state by luxu-

rious living, by overworking the mental faculties, and still more by the imprudent over-development of emotions.

Thus hysteria is frequent at puberty whenever the patient has been debilitated by perverse education and premature menstruation. Later in life, when the generative organs become fully developed, if, on the one hand, the accomplishment of their function be denied, while, on the other, they are excited to action by indolence, good living, and the incentives of civilized society, then will more serious attacks of hysteria take place, particularly if the menstrual function be irregularly performed. This is proved by the experience of Parent Duchatelet, who found that only 8 per cent. of prostitutes were subject to hysteria while following their deplorable life; while, on the contrary, when they enter the Magdalene institution they are generally troubled with hysterical symptoms, or with sensations of suffocation at the epigastric centre, with cerebral congestion and a disturbance of the intellect, which requires an appropriate regimen. The milder manifestations of hysteria are very frequent during the "*dodging-time*," and for some time after cessation. B. de Boismont has noted the more frequent occurrence of hysterical nymphomania at that, than at any other time.

2. In the convulsive form, in addition to some of these hysterical symptoms, there are fits characterized by the partial loss of cerebral power, with convulsive action. I shall speak of them as *Hysterical fits* or convulsions, and consider these hysterical phenomena as nervous reflex symptoms originating in sexual irritation, which may be present without pain in the womb or ovaries.

The influence of the sexual system of woman in the production of hysteria is a medical dogma which has been unimpaired by time. First promulgated by Hippocrates and Galen, it received fresh confirmation from De Graaff and Drelincourt, was admitted by Morgagni and Bonet, and has lately been established incontrovertibly by Landouzy in his prize essay on hysteria. This does not at all preclude the existence of hysteria in man. Why should it not be produced in man by the undue action of the genital apparatus on a predisposed nervous system? indeed Piorry gives the name of orchialgia to these cases. Hysteria in man is,

however, much less common than is supposed. In thirty reported cases, Landouzy only found four, related by F. Hoffman, Breschet, Mahot, and Aligre, which could bear examination, and in these there was no abundant limp urine after the attack, no tears without motive, no pandiculations, nor that nervous susceptibility which, between the attacks, constitutes the groundwork of hysteria.

CASE 21.—A gentleman, aged thirty, of a sanguine complexion, middling stature and size, with a well-formed head, and with prominent eyes, a tutor, very clever at languages, but shy, bashful, deficient in the art of turning his talents to good account, though not failing in courage—for considering himself aggrieved by the father of one of his pupils, he brought him into court—two years ago, without any known cause, while giving a lesson of mathematics, experienced strange sensations in his head, and became insensible. He remained so for a few minutes, and, by external and internal stimulants, came to himself. While insensible there were no convulsions, no frothing at the mouth, but this state was followed by headache and languor. He had a similar attack a few days after, but none since. In the month of April, 1852, after much preliminary talk, he explained that although his bodily health was excellent, and his pecuniary position comfortable, he had of late been subject to lowness of spirits, for which he could discern no cause. He had also been annoyed by a sensation of something strangling him, and asked me to look at his throat, which presented nothing peculiar. He said that these symptoms became worse at night, and were greatly, if not completely, relieved by a copious flow of tears. Hysteria in a man being so uncommon, I questioned him respecting the state of the reproductive function, and he said that though he often felt a desire for sexual intercourse, he never indulged it, from a sense of duty and religious motives. I ordered a sedative mixture, but it had no effect, for he was worse a few days after. On May 6th his bodily health was excellent, appetite good, bowels regular, urine as usual; strength greater than usual; he could walk for miles without fatigue; his intellectual faculties were clear; he gave his lessons without any mental strain, but when he had done, if he returned home to read as usual, he could not

continue doing so for more than an hour. The lowness of spirits came over him, and tears ran from his eyes "like water from an overflowing cup." For the last few days his dread of returning home had been so great that he wandered about the streets or in the fields until midnight, and then often returned to spend sleepless nights, or to be buried in a dead heavy sleep peculiar to many cerebral affections. There were no other therapeutical indications, so I merely ordered a pill, containing a quarter of a grain of extract of opium, one grain of extract of hyoscyamus, and two grains of aloes, to be taken every night. This did no good; the mental depression was increased, particularly by fine weather and by the sight of happy people. June 4th.—After much trouble I extracted from the patient that the cause of his suffering was, that he had formed an attachment for a lady living in the same house as himself, and whose hand he despaired of obtaining. I advised the patient to remove to another part of town, and in time he recovered, though he still remained nervous and eccentric as before.

Dr. Bedford, of New York, relates the case of a boy, who for six months had all the leading symptoms of hysteria. This was caused by onanism, and on giving up the habit he recovered.

Thus, though man may have general good health, yet, if he have a peculiar nervous system, and this system be influenced by the sexual organs, excited by strong desires, and restrained by duty, hysteria may appear, as in this case, and as in that related by F. Hoffman. Dr. J. Conolly and Romberg mention having not unfrequently witnessed symptoms somewhat similar to those detailed in men previous to marriage.

The utility of a critical examination of the throat is well shown by the following case:—

CASE 22.—A tall, pale-faced man of forty, consulted me at the Farringdon Dispensary, for epileptic fits, which had come on after long-continued anxiety. They would waken him suddenly at night, and make him rise for fear of suffocation; but what he mostly complained of was the sensation of a lump in the throat, which seemed to move up and down. I considered this to be a nervous symptom, but on examining the throat I found a large mass of mucous membrane pro-

truding from the right side of the uvula, and a cylindroid polypus, about two inches long, and half an inch broad, attached to the right pillar of the velum palati by a pedicle the size of a crowquill. It was this polypus which caused suffocation when the patient was lying in certain positions. I sent the man to a colleague to have it removed, but as he could not find the polypus, I recommended him to another colleague, who removed it.

Hysterical fits or convulsions rarely occur at first or last menstruation. They are sometimes caused by the deficiency or the absence of the flow, or by the amount of concomitant pain, and are frequently the immediate consequence of suppressed menstruation. In all such cases, the ovaries and womb become centres of morbid irritation, which, being conveyed by the excitor nerves to the spinal marrow, thence gives to the muscles a motor impulse which cannot be controlled by the will.

I have said that in some women connexion produces pseudo-narcotism, in others it is followed by hysterical fits, even with those who, as virgins, had not so suffered. They also occur to women during pregnancy, and at parturition, if the convulsions of eclampsia can be considered as hysterical fits, modified by the conditions of pregnancy. Chambon, Baudelocque, and Velpeau have observed that when eclampsia occurred during the last months of pregnancy, the convulsive fits came on at what would have been the menstrual epoch.

Hysterical convulsions are sometimes the consequence of ovarian or of uterine diseases, and can only be removed by curing them, while at the same time cauterization of the neck of the womb may immediately determine hysterical convulsions in highly nervous subjects.

Besides the usual convulsions of hysteria, there may be partial convulsive action, the convulsion of a limited set of muscles, as in partial chorea. Hiccough is another example of limited convulsions. This frequent symptom of diseases of the alimentary canal is seldom connected with disorders of the generative organs. I find, however, that Bonet has seen hiccough accompany the menstrual periods, and J. Frank quotes Schurigius, as having met with a young woman who was continually troubled with hiccough until it

was removed by the appearance of the menstrual flow. Hic-cough has been more frequently met with in puerperal women. Alberti, de singultu præcipue puerperarum. Hal. 1738.

Andral relates the case of a young woman of nineteen years, whose catamenial flow was suddenly checked by fright, and when the next monthly period returned, instead of the flow she was seized with spasmodic contraction of the lower extremities, the legs being bent to such a degree that the heels touched the nates. At intermenstrual periods her health was perfect, and on the restoration of the courses the convulsions ceased.

With respect to the generation of hysterical phenomena, while admitting the truth of the old adage, "Sanguis frenat nervos," and that an impoverished state of the blood is a predisposing cause of hysteria, I must remind the reader that it occurs under every variety of state of the circulation. There is now a tendency to attribute hysterical delirium and convulsions to a toxæmic effect of retained menstrual blood on the brain; but as hysterical symptoms are observed before first menstruation, they cannot be attributed to a poisoning of the blood; besides, what necessity is there to attribute any poisonous qualities to the menstrual flow, since all are acquainted with cases wherein the sudden suppression of an hemorrhoidal discharge gave rise to great constitutional disorders, or to pulmonary hemorrhage or apoplexy? The nervous, and not the circulating system, is the medium by which the ovaries affect the brain, so that it may produce hysterical symptoms in exactly the same way as it produces pseudo-narcotism. What, however, was obscure in the mechanism of pseudo-narcotism is plainer in that of hysteria. If the pathologists of all ages point to the reproductive organs as the starting-point of hysterical affections, they also, like the patient, draw attention to the pain or suffocation at the pit of the stomach, to the sensation of strangulation, after which comes the involuntary laughter or the tears, the convulsions, the coma, &c.

Professor Schulzenberger, of Strasburg, has shown—*Gaz. Méd. de Paris*, 1846—that it is sometimes possible, by mere pressure on the ovarian region, to cause the irradiation of

pain from that focus to the epigastric region, and by continuing the pressure, to induce, first the globus hystericus, and soon afterwards hysterical convulsions, while pressure on any other part of the body produced no such effects. In a highly nervous hospital patient, pressure upon the ovarian region caused convulsions, without any intermediate symptoms; this experiment was repeatedly tried by several professors of the faculty of Strasburg, and Romberg has witnessed a similar chain of phenomena in other patients.

I have met with a similar case in dispensary practice. A very nervous-looking woman, about 40 years of age, often remained for hours quite unconscious. This was generally caused by some abdominal jar, once by striking the groin against the edge of a table, and I have several times brought on unconsciousness by gentle pressure on the left ovarian region.

These are doubtless rare cases, but they remind the observer how frequently hysterical convulsions are preceded by pain or strange sensations in the hypogastric and ovarian regions, pains which produce the suffocating feelings felt at the pit of the stomach, and then the globus hystericus. Landouzy has shown that in the vast majority of cases the hysterical convulsions were ushered in by hyperæsthesia of cutaneous or ganglionic or special sense nerves. In many cases of epilepsy, the aura rises from the pit of the stomach, the attack being preceded by violent epigastric pain. Admitting a predisposed nervous system and a too powerful ovarian nîsus, it will react on the *cerebrum abdominale* so as to intensify its peculiar nervous influence, which is sent to the brain with such headlong precipitation that woman, no longer the mistress of her own actions, is literally "fuddled with animal spirits, and made giddy with constitutional joy." When the ovarian nîsus is further increased, or reacts on differently constituted nervous systems, after accumulating for a time, it determines at last that hyperæsthesia of the spinal cord which exhausts itself in convulsions. Finally, if when the ovarian nîsus is at the highest, it is suddenly disturbed by intense mental emotion; if the centrifugal nervous currents, directing the menstrual flow, are suddenly checked, the whole energy of the menstrual nîsus is thrown

on the central ganglia of the ganglionic system, which react on the brain with such intensity that in a few hours death ensues, and nothing is found to explain it but congestion of the cerebral blood-vessels, which is rather the result than the cause of the disease.

This may be called hypothesis, but the medical practitioner has no other means of saving his patient in such a case, than by acting, as if he saw with his own eyes, what I have described as the nervous currents moving along the nervous cords.

THERAPEUTICAL INDICATIONS OF THE TWO FORMS OF HYSTERIA.

1. Therapeutical indications of *Hysteria*, or of the hysteric diathesis.

a. To ascertain first, whether it be determined by inflammatory or other affections of the ovaria or the womb, but to bear in mind that "the nervous and circulating systems, though so closely connected in every function of life, have yet their separate powers. Even taking the whole of each system, these powers are not always, it would seem, in exact relation to each other; and this is more particularly true where the vascular changes, whether of inflammation or of simple congestion, are limited in extent. One may need, for relief, the change in circulation which bleeding affords, yet one may require at the same time that support or stimulus to the nervous power which is essential to the equal distribution of the blood, without which disorders of a new kind will supervene." What Sir H. Holland has applied to diseases of old age, is particularly applicable to the treatment of diseases of women.

b. To regulate the menstrual function.

c. To strengthen the nervous system by a well-contrived plan of mental, moral, and physical hygiene. To enter into details would be to re-write what may be found in my *Elements of Health and Principles of Female Hygiène*.

2. Therapeutical indications of *Hysterical convulsions*.

a. To use cold water—that being always at hand—dashing on the forehead and epigastric region. Ice may also be applied to the forehead, mustard poultices to the legs, and a cold water enema often cuts short the attack. Cruveilhier

says cold water is so infallible, that, to make the patient drink, he recommends the jaws to be forcibly separated, and the water to be poured down from a bottle as a groom would serve a horse—a plan which, if employed by beginners in practice, would not tend to increase it.

b. To remember that “Sanguis frenat nervos,” and not to be frightened into blood-letting, unless there be evident fulness and strength of pulse, and an energetic action of the heart. In strongly constituted women, bleeding from the arm at intermenstrual periods, or from the leg if the menstrual epoch be at hand, may sometimes be resorted to, though a few leeches applied to the head will be generally found sufficient.

After the first violence of the attack is over, its return should be prevented by the exhibition of what we have recommended for pseudo-narcotism, likewise preparations of valerian, of assafoetida, and of opium, exhibiting the latter *per rectum*, in an injection of from twenty to forty minims of the vinum opii in a teacupful of milk and water, which may be repeated, if necessary, during the day. The camphor liniment, to each ounce of which is added one drachm of laudanum, may be with advantage gently rubbed into the skin of the hypogastric region, and of the inner part of the thighs.

c. To put in force the therapeutical indications of hysteria.

Catalepsy is closely related to hysteria, with which it generally coincides and alternates, and the two have been considered as only differing in degree by Lieutaud, Georget, and Gendrin. In catalepsy there is unconsciousness, and the muscles have the power of retaining without fatigue the most complicated positions; and all this can be induced, in some, by mesmerism.

The cases I have seen were either caused or complicated by morbid menstruation. In one, it was brought on by the sudden death of the patient's father, during the menstrual period, which checked the flow for ten months. When it re-appeared, I entertained hopes of the patient's complete recovery; but, although her health has improved, she is still blind, and has now been so for three years. Dr. Bedford gives a case in which catalepsy was evidently caused by con-

nexion in a patient aged nineteen, who was suffering from chronic enlargement of the body of the womb, and who had been very nervous ever since seventeen, when the first menstrual flow was suddenly stopped by fright. Rondelet cites a similar case, ascribing it to the wife's aversion for her husband; but if this were capable of inducing catalepsy, the disease would be more common. Catalepsy is rare, and few cases have been published since ovarian and uterine diseases have been better known to the profession. In two cases, however, Dr. Pistocchi found ovaritis to coincide with catalepsy; it therefore behoves observers to note how far such may be the case.

6. EPILEPSY.

I have repeatedly seen epilepsy originate in morbid menstruation; and menstruation, however healthy, may bring on an epileptic fit, when once the habit is confirmed. Beau found that, out of 127 cases of hysteria and epilepsy, in thirty-five the origin of the disease coincided with menstruation.

B. de Boismont has seen several cases wherein hysterical and epileptoid attacks only came on at first menstruation and at the decline of life, and at each menstrual period, the nervous symptoms completely disappeared on the cessation of the menstrual flow; while Dr. Thurnam has met with one or two epileptic fits occurring regularly at each menstrual epoch, when the flow was very scanty, and on menstruation ceasing, the fits became more numerous, especially during one week of every month, and there was pain on pressure of the left iliac region. The patient improved, and under the influence of steel, menstruation re-appeared. Did space permit, I could relate several similar cases; I shall, however, briefly sketch the following:—

CASE 23.—E. G. came to the Paddington Dispensary, June 21st, 1852. She is nineteen years of age, of middling height, spare habit of body, dark hair, grey eyes, sallow complexion, and looks nervous. She has six brothers and sisters in rude health, and her father and mother are both strong. Menstruation appeared at thirteen; was regular every three weeks; from the first was only accompanied by pseudo-narcotism; has never missed, but was always moderate in quantity, and

less during the last two years. Since that period she has experienced a "funny feeling" in the right foot, and a slight pain and shaking in the calf and thigh of the same side. This often occurred, lasting from five to ten minutes; but on two occasions the pain and shaking in the thigh were followed by trembling in the stomach, and by such severe pain in the epigastric region, that she shrieked, fell, lost her senses, and bit her tongue. The fits did not occur at the monthly periods, and rubbing the foot sometimes prevented the further progress of the nervous symptoms. The scantiness of the menstrual flow, and the debility of the patient, suggested that steel might afford relief; and it did so, for instead of having the sensations in the foot every week, she only had them once in six weeks, and the monthly flow became more abundant.

B. de Boismont has known epileptic attacks occur in a girl every month for a whole year, but they ceased when menstruation was established.

A great observer, Esquirol, was convinced that the reproductive organs were frequently the first cause of epilepsy; and cases are recorded of its having been caused by connexion, pregnancy, and ovarian or uterine disease. On the other hand, there are epileptic patients who are only free from attacks during pregnancy. The connexion between the testicles and epilepsy has been thought so evident, that castration has occasionally been performed for the cure of epilepsy, but with very questionable success.

Extensive ulceration of the neck of the womb does not produce hysterical or epileptoid phenomena, and it is ovarian irritation, not acute ovaritis, which causes epilepsy, for slight causes sometimes produce strong reflex action; tickling the fauces causes sickness; and by merely pressing the hand on the neck of the womb, Dr. Ramsbotham, in one patient, brought on an attack of epilepsy, while I produced complete unconsciousness, in another, by the same means.

The predisposing condition in the cerebro-spinal system in epilepsy and catalepsy is, of course, different from that of hysteria, but the mechanism of the diseases is the same. The disease may arise without the generative system being at all implicated, but the *spina venifica* is to be sought in the ganglionic nervous system; and, however little the anomalous

pains in some extremity of the body can be understood, there is frequently epigastric pain, or a sense of suffocation sufficient to show the influence of the *cerebrum abdominale* in the production of the disease.

THERAPEUTICAL INDICATIONS OF CATALEPSY AND EPILEPSY.

1. To regularize the menstrual function.

2. To administer sedatives by the bowels and the vagina, not only at menstrual periods, but whenever the attacks come on.

7. INSANITY.

I have already remarked how frequently temporary derangement of the moral and intellectual principle was produced by the seemingly healthy action, and by the morbid performance, of the various phenomena of the reproductive function. Like other observers, I have seen numberless instances of *temporary* mental derangement, caused by the excessive or deficient action of the reproductive organs on the nervous system, but I now draw attention to permanent mental derangement. B. de Boismont has, in four cases, known the ovarian nîsus so react on the brain at puberty as to cause madness. Two of the patients were maniacal, and required strait-jackets; in the other two, delirium was partial. Esquirol established, that derangements of menstruation form one-sixth of the physical causes of insanity. B. de Boismont professes the same opinion, and says, that the menstrual epochs are always "*un temps orageux*" even for those insane women who regularly menstruate. These authors, and many others, assert that the restoration of reason in such cases depends upon the regularization of the menstrual function. Sometimes, however, the reappearance of menstruation and the restoration to reason are coëtaneous results of the hidden cause of the patients' improvement, producing at the same time nervous as well as sanguineous phenomena.

Moral insanity is admitted to be a result of morbid menstruation by Drs. Taylor and Marc. This opinion has received a legal sanction by the decision in the case of *Reg. v. Brixey*, Central Criminal Court, June, 1845, who was tried for in-

fanticide, and acquitted, on the plea of her having suffered from disordered menstruation.

Puberty in the male, says Dr. Taylor, may be attended by those morbid propensities to which women are most frequently subject. Dumas' ninth case is an excellent sample. A girl of eighteen, whose mother had been insane, became gradually more and more deranged and accustomed to use obscene language, from the age of fourteen, when the menstrual flow first came, and continued morbid. She was cured in six months by regularizing the menstrual function, and by camphor, of which she took 100 grains a day. She married, and had no return of insanity.

The tendency to suicide of girls imperfectly menstruating or chlorotic is recorded in Grecian history. A woman started with the intention of drowning herself. On the way the menstrual flow appeared, and she changed her mind. Many insane and epileptic patients only seek to commit suicide during menstruation. In France, the proportion of men to women who commit suicide, at most periods of life, is as 3 to 1, but from ten to twenty years of age, 2 to 1—puberty, love, marriage, explaining the difference.

It is generally believed that, when women have ceased menstruating, they cease to be susceptible of nervous affections. This is not true, for during the "dodging-time" they are extremely liable to the minor symptoms of hysteria, lowness of spirits, involuntary tears, peculiarities of temper, &c., which, when unattended to, not unfrequently merge into downright insanity.

It is sufficient to go round the wards of one of the large lunatic asylums in the vicinity of London to become convinced of this; and Dr. Davey assured me that such cases permit of a greater proportion of cure when due care is paid to the pathology of that period. Both assertions are confirmed by B. de Boismont, who says, that in thirteen years he has met with twelve cases of insanity, evidently produced by cessation of menstruation, and yet, sometimes in ceasing to menstruate the insane are cured. If it would not take too much space, I could adduce five instances of insanity appearing without any other cause than the change of life. Dr. Day admits that senile insanity is sometimes

caused by a diseased condition of the ovaries. Esquirol relates the case of a lady in whom mania appeared on the nuptial night; the second attack came on at the time she conceived. Dr. Belhomme relates that a lady had a first attack of mania, lasting twelve days, during pregnancy in . 1825
 She became again pregnant, and was again afflicted with mania in 1826
 She was pregnant and had a more obstinate attack in 1830
 Another slight attack during another pregnancy in . 1835
 Madness became permanent after suppression of menstruation, in 1836

This time the lady was not in the family-way, but complained of pains in the pelvis. Lisfranc found hypertrophy of the fundus uteri and erosions on the neck of the womb, and the amelioration of the mental disease coincided with that of the womb, which was obtained by leeches, injections, and repose. Dr. Belhomme also cites the case related by Dr. Gaultier de Claubry, of a lady who had a first attack of mental derangement during pregnancy, but who soon recovered after her confinement. Ten years after she had another attack, and it was also thought that she was in the family-way; but Baron Boyer discovered a uterine polypus, which was extracted, and the mental derangement soon subsided.

An old observer, Panarole, speaks of a patient who was remarkably modest and intelligent when pregnant, and who on being confined, was stupid and given to erotomania. Puerperal mania will not be forgotten. I merely couple the memento with the consoling fact that women almost always recover. An hysterical woman committed suicide, and Esquirol found nothing but an inflamed ovary. Négrier says, the ovaries cause two forms of madness. 1. Erotomania and subsequent idiocy; 2. Hypochondriasis with a suicidal tendency. Bedford has seen decidual dysmenorrhœa accompanied by the most fearful paroxysms of nervous irritation bordering on insanity; and Mr. Acton has traced many cases of imbecility, hypochondriasis, and syphilophobia in men, to lesions of the reproductive organs.

Having passed in review the effects of the ovarian nismus on the cerebro-spinal system at successive periods of life, and inquired how, in some women, it can be the main cause

of madness, I conclude from the written experience of trustworthy observers, from the materials collected by myself, and from the vivid recollection of many facts :

1. That between the haziness of intellect, the slight forgetfulness of pseudo-narcotism and idiocy, there is no break ; that every intervening degree is exhibited in some women, at one of the phases of healthy or of morbid ovarian nisis.

2. That between the first slight estrangement of a girl's temper and the maniac's delirium there is no break ; every intervening link being supplied by some women, at some one or other of the successive phases of healthy or of morbid ovarian nisis.

3. That between those first indications of uncontrollable muscular power called " the fidgets," and the strongest convulsions of hysterical seizures, there is no break, every intervening link being supplied by some women at one of the phases of healthy or of morbid ovarian nisis. When the same powerful influence produces permanent insanity, by what other mechanism can it act on the brain than by that of hysteria ? The ovarian nisis rouses the centre of the ganglionic system to increased energy, so that without any structural change in the brain its functions may be totally perverted by the too powerful action of the ganglionic nervous system. I am thus led to look on this nervous system as a source of vital power, infallible when confined within the limits of the vegetative functions over which it presides, constantly reacting, therefore, on the cerebro-spinal system as far as its nutrition is concerned, but interfering with the proper functions of the brain when its influence becomes too powerful or perverted. And as the nature of this ganglionic force is to be impulsive and uncontrollable, it casts reason off the rails, as Galen might have said of what he called the lever of the vital forces, if railways had been an invention of his age.

If this be true of those rare instances of insanity produced by undue action of the ovarian nisis, does it not lead to the conclusion that the cause of insanity in other cases should oftener be looked for in the ganglionic nervous system, than in the brain ? Many of the habitual phenomena of insanity are referable to no other explanation.

If in many insane women the menstrual function is regularly performed, despite the wet, cold, and other counteracting influences, does it not show an increase in that ganglionic force on which the ovarian nismus depends? If the insane of both sexes are capable of a surprising endurance of cold, does it not show an equally surprising increase of that ganglionic force on which depends animal heat as well as nutrition?

I remind those who devote their time to the study of insanity, that to study it in asylums only is like studying tubercular consumption in its second stage. That its first stage is hidden in the midst of a domestic circle, either incapable of understanding its phenomena or anxious to hide whatever may be too well understood. If they look more carefully into the matter, they will agree with M. Moreau of Tours, who observes: "That almost all mental diseases are, as it were, foretold and preceded by symptoms which generally pass unobserved, such as fainting, giddiness, and vertigo, and by nervous sensations arising from different parts of the body like the aura epileptica, sensations which the patients themselves compare to excitements, or to electrical shocks."

In giving this direction to their researches, mental pathologists will not venture into unexplored paths—they will merely return to an old one, and resume the broken thread of medical tradition which, in the time of Plato and Hippocrates, sought an origin for insanity in certain morbid conditions of the principal abdominal viscera.

Thus have I incidentally shown that the study of hysteria should be the preface to that of insanity, and that the study of both leads to the conviction that there are two centres of nervous power, though not two nervous systems—the arctic and antarctic poles of the human microcosm, on the due equilibrium of which depends the moral and mental, as well as the physical, health of man.

CHAPTER VI.

“ Quibus uteri inclinatio est, in coxam dolorem transire, et crus ipsum, quod è regione est, per incesum claudicare.”—
GALEN, *De Loc. Affect.*

ON THE SPINAL SYMPTOMS OF MENSTRUATION.

WHEN the organs of vegetative life are seriously disturbed in their functions or structure, pain is experienced sometimes in the viscera themselves, but more frequently in some portion of the walls of the cavities in which they are contained. The spinal nerves which are distributed through the viscera receive the morbid influence, transmit it to that portion of the spinal cord whence they originate, and the pain is then reflected through the spinal nerves which proceed to the cavities containing the viscera.

The ovarian nismus is the function of the ovarian nerves. By forcibly attracting the fluids to the ovaria, these bodies become congested, and by their reaction on the uterus this organ likewise becomes congested. This increase of nervous activity, heightened by the gorged state of the vessels placed within its sphere of activity, determines the pains which constitute the neuralgia of menstruation. The reproductive organs are, indeed, the only organs of the body whose function is painful even when healthily performed. Menstruation is a species of parturition, and it is seldom healthy unless attended by spinal pains, which are diminished in, or do not attend the unhealthy menstrual secretion of chlorotic women; but, as they recover, the spinal pains re-attend the menstrual epochs.

The ovary may transmit pain to the spinal nerves by means of the splanchnic nerves. The upper part of the womb is supplied with spinal nerves from the intercostal branches through the medium of the splanchnic nerves and spermatic plexus, and any disease, seated in that part of the womb, may cause the reflected pains to be felt along the intercostal nerves,

which arise from the same part of the spinal cord as the nerves furnished to the fundus of the uterus. The middle and lower portion of the uterus is furnished with branches of spinal nerves from the lumbar plexus through the medium of the hypogastric, and when this part of the womb is diseased, the pains are transmitted along these nerves, and reflected on those which arise from the lumbar plexus, and therefore along the nerves supplying the muscles of the lumbar portion of the back, the walls of the abdomen, inside of the thighs, the front of the leg, and even sometimes to the instep. The spinal nerves distributed to the vaginal portion of the generative intestine arise from the sacral plexus; hence, disease of the vagina causes pains to be reflected along the nerves which come from this plexus, and as this plexus furnishes nerves to the sacral region, to the perineum, the posterior part of the thighs, and the calves of the legs, pains may be experienced in all this course, and in some rare cases even in the soles of the feet. It will therefore be seen that it is not possible to ascribe the dorsal and the hypogastric pains each to a distinct set of nerves. As anatomy and physiology do not suggest a classification of abdominal pains, I shall adopt that offered by nature, and divide them into dorsal and hypogastric. The following table will give an idea of the degree of frequency of the ordinary neuralgic symptoms of menstruation at successive periods of life.

With regard to the progress of cerebro-spinal symptoms in general, I find that in the majority of cases the symptoms precede the menstrual flow, and abate as it progresses :

	Per cent.
That they subside on the appearance of menstruation in .	28
That they subside on the second or third day in .	19
That they last until the end in	10
That they last several days after in	3
That there was back pain at the time only in	4
That there was hypogastric pain at the time only in	3

A great intensity of pain in the cerebral and spinal regions is seldom to be met with at the same time, for the two are, in general, so counterbalanced that when a great amount of cerebral symptoms exists, the spinal symptoms have not a

TABLE IV.
SYNOPTICAL TABLE OF THE SPINAL SYMPTOMS OF MENSTRUATION.

Spinal Symptoms of Menstruation.	During its Prodromata.	During its regular Establishment.	At its Cessation.	Influence of Connexion on the Spinal Symptoms.	Influence of Parturition on the Spinal Symptoms.	Influence of Cessation on the Spinal Symptoms.
	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)	(Per Cent.)
Dorsal Pain	45	75	70	{ Increased . . . 26 { Decreased . . . 4 { Same 5 { None 65	Increased . . . 31 Decreased . . . 3 Same 10 None 56	Increased . . 46 Decreased . . 7 Same 17 None 30
Hypogastric Pain .	29	62	51	{ Increased . . . 23 { Decreased . . . 3 { Same 7 { None 67	Increased . . . 22 Decreased . . . 5 Same 4 None 69	Increased . . 30 Decreased . . 9 Same 12 None 49

N.B.—The numbers in each of the columns will amount to more than 100, as many women, being affected with more than one symptom, are classed under the respective symptoms.

similar intensity ; and it will be found that, whereas during the prodroma of menstruation, and during “the dodging-time,” the cerebral symptoms are most intense, the spinal symptoms are, in general, more common and annoying during the period of the full activity of the generative function. At cessation, however, the intensity of both groups of symptoms is sufficiently augmented to warrant the popular belief in the dangers of the critical time.

LESIONS OF SENSIBILITY.

DORSAL PAIN.—By this I mean a pain experienced in the spinal cord, which pain is fugitive in its upper portions, and principally settles in its lower extremity, radiating to the small of the back, the loins, thighs, and legs. This pain is generally described as an aching or numbing pain, a gnawing, dragging, burning, or grinding pain ; a sensation as if the back were broken, or as if it were opening and shutting—varieties of pain, as are those of neuralgia in other parts of the body. Their intensity varies from that slight pain which does not prevent moving about, to that which for a time usurps the place of all other sensations, and impels women to seek relief by rolling on a rug, confining them to their beds for a few days.

The frequency of the pain in the back as a	
prodroma symptom, is	45 per cent.
As a symptom of well-established menstruation	75 „
And at its cessation	70 „

The growing pains of girls, which are often severe in the ankles, legs, knees, thighs, and the lower part of the back, particularly when they are accompanied by pseudo-narcotism, are often premonitory of menstruation.

Dorsal pains are the frequent accompaniment of a deficient menstrual flow, forming one portion of the pains called dysmenorrhœa, and indicate the ovarian nîsus, in the absence of the catamenia. I have seen the frequency of dorsal pains during the “dodging-time,” and after cessation, but they are also symptoms of pregnancy, of parturition, and of diseases of the ovaries and of the womb. As both the womb and ovaries are supplied by the same ganglionic and cerebral

nerves, it is not always possible to affirm which pains emanate from the womb, and which from the ovary; it is, however, clear that severe lumbar pain can be caused by the ovary alone, since it exists in cases of congenital deficiency of the womb, and is often met with alone before the womb has begun, or after it has ceased to menstruate. Many cases treated as spinal irritation have no other origin; it was certainly so in three, for which I was consulted, for the first appearance of menstruation removed the symptoms for which severe treatment had been applied for several years. In another case, a married lady had suffered from evident symptoms of uterine ulceration, which had been completely overlooked by two surgeons accustomed to treat spinal affections. Spinal irritation—except in some cases of lead poisoning—is a mere symptom caused by the irritation of the peripheral extremities of the spinal nerves of the neck of the womb; and to admit it as an idiopathic disease, is, to use the expression of Romberg, “a *phantastic caricature* dragged into pathology by rash observers, and thus its name found a willing reception among the public, because it seemed to hold out a simple and rational mode of explaining complex conditions.”

It is well to couple what precedes with the remark that menstruation goes on regularly and without unusual pain in cases of acute inflammation of the spinal cord. Exceptionally, uterine disease causes fixed, long-continued pains between the shoulders, which disappear when the disease is cured. The sacral pain—the frequent attendant on uterine disease—is paralleled by the intense sacral pain which sometimes accompanies anal excoriations.

HYPOGASTRIC PAIN.—I give this name to the pains generally referred to ovarian and uterine regions. This pain differs from the symptom just described, by being for the most part peculiar in its nature. Patients generally describe it as a pressing, forcing, or as a bearing-down pain. It seems to indicate muscular contraction of the body of the womb and tenesmus of the cervix uteri; it has an expulsive character, and marks the direction of those neural currents which direct the course of blood towards the womb, and procure its expulsion from that organ.

When well localized in the ovarian regions, it is to be referred to those organs, just as the surpubic pain more particularly indicates uterine congestion, when attended by sensations of uterine tenesmus. This explains one of the difficulties in the diagnosis of uterine and ovarian diseases, and permits some to ascribe an ovarian origin to dysmenorrhœa, while others consider it to be generally caused by inflammation of the neck of the womb. It may depend upon both causes, and when discussing the diagnosis of sub-acute ovaritis, I shall attempt to show when pain has an ovarian origin, and how this is to be inferred. I have heard the pains described as a burning heat in both ovarian regions, radiating to the abdomen and to the thighs. These pains are frequently accompanied by the dorsal pain.

The frequency of hypogastric pain as a prodromic symptom is only	29 per cent.
As a symptom of confirmed menstruation	62 „
And at its cessation	51 „

Hypogastric pains are frequent accompaniments of a deficient menstrual flow, of amenorrhœa, and of the cessation of menstruation. They attain to great intensity in what is called false pains, and their maximum in parturition; but although the amount of pain is different, it is felt by the same nerves, and is subservient to the same end, the separation from the womb of the fœtus, of the decidual membrane in certain forms of dysmenorrhœa, or of the menstrual flow.

HYSTERICAL PAINS.—Besides these regular spinal pains of menstruation, the performance of the menstrual function may be accompanied by anomalous pains, which are called hysterical, to denote their frequent coincidence with the hysterical condition of the nervous system. When the reproductive organs have induced an hysterical disposition of the nervous system, it becomes more susceptible to neuralgia, and intense local pains arise sometimes in the weakest part of the body, without its being possible to explain them. Severe toothache, intense abdominal pains, submammary pain, are frequently experienced by hysterical patients. It must, moreover, be remembered, that as the nervous temperament becomes developed, the body becomes more obedient to the will, and as hysterical patients

can to a certain extent repel or bring about an hysterical fit, so likewise can they induce or increase the functional disturbance of certain organs, by concentrating their whole attention upon those parts on their first indications of suffering. This seems to be the pathology of many cases of intense neuralgia in the joints, and in the vertebræ, from which patients suddenly recover when the powers of the mind have been strongly diverted by some irresistible necessity for exertion. Should the chest be slightly affected, the hysterical woman may so dwell upon her local sufferings as to develop symptoms which mimic phthisis, although the lungs contain no tubercles. Dr. Theophilus Thompson, in drawing attention to such cases, states that an hysterical patient of his could, at will, induce an attack of hemoptysis: she had brought the pulmonic branches of the vagus under more than ordinary control; but pertussis exhibits a much more frequent subjection of the same nerves to the will.

Anæsthesia, more or less complete, is very frequently observed in connexion with morbid menstruation, hysteria, and paraplegia. In referring to the works of Valleix and Beau for a full account of the isolated spots of insensibility often met with in hysterical patients, I must not omit to notice that the left side of the body is most liable to pain. It is so with hemicrania, with mammary hyperæsthesia, with infammammary pain, and pain in the vicinity of the left ovary generally accompanies uterine inflammation.

THERAPEUTICAL INDICATIONS OF SPINAL PAINS.

1. To treat the neuralgia by sedatives, of which the various preparations of opium are the best. Their use should be begun as soon as possible, for it is much easier to obviate pain than to relieve it when acute. Squire's solution of bi-meconate of morphia is a very good preparation, and from five to ten drops should be given every three or four hours until the abatement of pain. This is only a new application of an old form of the same valuable drug, for Fothergill and Petit Radcliff long since gave, for painful menstruation, a pill composed of a grain of thebaic extract every hour until the pain abated. From thirty to forty drops of vinum opii in three ounces of very thin starch, as an enema, may also be given,

repeating the remedy according to the urgency of the case, one, two, or three times a day. Opiates not only calm pain, but, as Dr. Gregory has remarked, often facilitate the menstrual flow. This reminds me of the great utility of opium in intestinal obstruction, still too frequently treated by drastics. When opiates are required to assuage the tenacious pains attendant on the cessation of menstruation, I have continued them for weeks without producing the toxic effects of opium.

2. To ascertain, after the subsidence of the pain, whether it be not a symptom of ovarian or uterine disease, so that by curing this, its recurrence may be prevented.

3. To regulate the menstrual function.

4. To give steel, for pain is often the prayer of the nerve for healthy blood, and Brown-Séquard has shown that, even long after death, muscular irritability may be excited by a fresh supply of red blood.

LESIONS OF MOTILITY.

Such are the lesions of sensibility to which the ovarian nismus gives rise; but the spinal nerves may be so modified by the menstrual function as to cause lesions of motility in the parts of the body which they supply. Hippocrates had already noticed that women, at puberty, were liable to lameness; and I have seen two delicate girls, whose lower extremities were so painful and benumbed that walking was intolerable—symptoms which disappeared when the menstrual flow began. F. S., for four months previous to first menstruation, felt her hands so benumbed that she could not dress herself. A. E. lost the use of her limbs, without any cerebral disorder; she could neither walk nor dress herself for two years previous to the first appearance of menstruation, at sixteen, after which she soon recovered, and never afterwards experienced anything similar. Paraplegia and paralysis of the bladder have been twice seen at puberty by B. de Boismont. The dependence of paraplegia on the ovarian nismus is evident from the fact that it generally comes soon after puberty, when menstruation is irregular, and is the result of reflex irritation of the spinal cord. Hoffman cites the case of a woman, in whom the sudden suppression of the

menstrual flow by fright was followed, first, by spasmodic twitchings, and then by complete hemiplegia. R. Leroy d'Etiolles' fiftieth case refers to a woman, aged twenty-eight, who entered a stream while menstruating. She suddenly felt icy cold, the flow stopped, with numbness of the lower limbs, which soon became paraplegic. In this case, two applications of eighteen leeches to the vulva, in the course of a week, cured the patient. Sometimes there is paraplegia without anæsthesia. Dr. Bonnafont has seen paraplegia, followed by general paralysis, with perfect integrity of sensation, one limb after the other recovering power to move, through the use of opium and chloroform—the inhaling of which, though in very small quantities, plunged the patient in a cataleptic trance, which lasted several hours. I have known pregnancy to be accompanied by a state of semi-paralysis of the lower limbs, and a case is recorded of paraplegia coming on every month, for a few days, during pregnancy, in a woman, aged twenty-one, who had been previously pregnant without such symptoms. It is well known that parturition alone—that is, the passing of the head of the child without any instrumental interference—may cause permanent paraplegia; both limbs being involved shows it to depend upon reflex influence; if one limb be affected, if there be permanent lameness of one foot or of one leg, it indicates that undue pressure has been made on the corresponding plexus of nerves. With respect to the frequency of well-localized paralytic affections, Sir B. Brodie does not hesitate to say, “that four-fifths of those who, in the upper classes, are said to labour under diseases of the joints, labour under hysteria, and nothing else. Such cases are frequently mistaken for those of ulceration of the intervertebral cartilages and bodies of the vertebræ, and in consequence of this unfortunate impression on the mind of the medical attendant, I have known, not a few, but very numerous instances of young ladies being condemned to the horizontal posture, and even to the torture of caustic issues and setons, for several successive years, when air, exercise, and cheerful occupation would probably have produced a cure in the course of a few months.” The persistence of these affections without aggravation is another reason to infer their nervous origin. Paralysis has been noted as an immediate

dependent on chlorosis. Dr. Sandras cites two interesting cases—one of a lady, pale, weak, with very small pulse, and habitual giddiness, who was suddenly taken with hemiplegia. As she very deficiently menstruated, Sandras did not bleed, but applied a few leeches to the thighs. The leech-bites only produced a little red serum, and the patient became worse. Seeing the danger of debilitating measures, he gave strengthening medicines, and with such benefit, that in two months she was able to go to the country, where she perfectly recovered. In one case—*Union Médicale*, Tom. VI., No. 125—a chlorotic lady became paraplegic in the midst of menorrhagia. The paraplegic symptoms lasted six months, and were cured by steel, two issues, and sulphureous baths.

When the cessation of menstruation is attended by serious abdominal disturbance, one of the lower limbs may be affected by a loss of use as well as by intense pain.

I have cured similar cases by promoting free perspiration, by sulphur, Dover's powder, and by the Turkish baths. Gardanne mentions that a woman of a strong constitution, at her forty-fifth year, suddenly ceased to menstruate; and at the same time she was seized with violent pains in the left thigh, which increased so rapidly, that at the end of four months she was not able to move the limb. As she had suffered from syphilis in her youth, mercurials were given, but without effect. Sabatier and Gardanne then advised moxas to be applied to the leg, which produced slight fever and great perspiration, but restored the use of the limb. Paraplegia is rare at the change of life, though more frequent than is supposed. It occurred in two out of Dr. R. Leroy d'Etiolles' twelve cases, and on careful inquiry at the Salpêtrière, where there is a great number of paralytics, many of the patients dated their complaints from the change of life. Most of these sufferers might have been cured in the early stage of the disease, when it depended upon congestion of the spinal marrow; but, subsequently, atrophy of its lower portion prevented the possibility of cure. In my cases, there was no organic uterine disease to account for the paraplegia; but in one of Dr. R. Leroy d'Etiolles', there was considerable swelling, abundant leucorrhœa, and the patient could not walk without several attendants. Iodide of potassium cured

the uterine hypertrophy, and the paraplegia disappeared. The six cases observed by myself were of a mild nature, and all recovered. There were pricking sensations in the feet, numbness of the lower limbs, great pain in the dorsal region, and an inability to walk. Three complained of a difficulty in passing water, and of a loss of sensibility in the skin of the lower limbs. Similar cases have been met with by Dr. G. Bedford and B. de Boismont.

CASE 24.—A lady's-maid, aged forty-five, complaining of violent pain in the loins, a medical friend ordered a mustard poultice; and as the pain persisted, he subsequently recommended a blister to the lumbar region. This application was immediately followed by paraplegia, and a neighbouring practitioner, who was immediately sent for, gave as his opinion, that the application of the plaster had determined the paralysis of the lower limbs. Although this assertion was contradicted by another medical man, who was afterwards called in on account of the persistence of the paraplegia, my friend received several letters from the solicitor of the family, menacing him with an action; but he set them at defiance, and he heard nothing more of this attempt to make a medical attendant pay for an occurrence which it was impossible to foresee. The patient went home to her friends, and a country practitioner, more clear-sighted, in this instance, than the eminent men of London, putting together the circumstance of the patient's age and the previous irregularity of menstruation, applied leeches to the womb. The result was a gradual diminution of the paraplegia, and the patient was soon able to walk with perfect ease. Thus the local application of leeches may be useful to cure disease at cessation.

Partial paraplegia not unfrequently attends cancer of the womb, and I have often known it to accompany chronic inflammation of the body of the womb; in such cases, sensation remains intact, and the limbs recover their power when the uterine affection is cured. This semi-paraplegia may occur suddenly after some nervous shock, but generally the limbs become weaker and weaker, till at last the patients cannot walk; they can sometimes only slightly move their limbs, but these movements are susceptible of being greatly increased, should convulsive fits supervene. The paralysis is

not always permanent; it may occur only for a few days before or after menstruation, the patient being able to walk at other times. It may facilitate the diagnosis to remember that in hysterical paralysis the muscles contract under galvanic impulse, which has no power over muscles paralysed by softening of the spinal marrow or fatty degeneration of their own tissue.

In all cases of paralysis having their origin in the functions or diseases of the sexual organs, one must never despair. No matter how long the patient may have been bedridden, from one day to another she may get up and walk. These are the cases that are suddenly cured by fright, anger, or by faith.

THERAPEUTICAL INDICATIONS OF LESIONS OF MOTILITY.

1. To regulate the menstrual function.
2. To strengthen the constitution.
3. To divert the patient's attention as much as possible from her sufferings, stimulating her to use her limbs in spite of the pain. It must be remembered that the muscles are not incapable of obeying volition, and when they are not exercised, the loss of power is in the mind, and a forcible impression on the patient's mind is the heroic remedy.

It has been shown how useful leeches are when applied to the womb to restore the movement of limbs which had been paraplegic for several months at the period of cessation. Favouring cutaneous exhalation has also been sometimes instrumental in removing pain and loss of power in one or more limbs, for which electricity has frequently, too, been found useful.

CHAPTER VII.

The quantity of a critical discharge is of far less importance than its quality and the punctuality of its performance.

ON THE CRITICAL DISCHARGES OF MENSTRUATION.

MANY morbid or healthy functions of vegetative life are repetitions of the same process, because they are presided over by the same ganglionic nervous system. Thus, in all fevers, in active hemorrhage, as in menstruation : 1st. There are the nervous prodromata, which testify to the existence of a hidden force, by which the vegetative nervous system is being moved to action. 2nd. There is a period of elaboration whenever the circulating system shows that it responds to the appeal of the nervous system, by the rapidity or fulness of the vital current. 3rd. There are the critical discharges by which the blood-vessels are relieved, and the nervous system restored to healthy action. I have considered the varied phenomena which manifest the ovarian nismus, and its action on the sanguineous system, and shall now pass in review its various critical discharges. It has been well established by Hippocrates and his numerous commentators, that in fever the benefit of a critical discharge is not to be measured so much by its quantity, as by its appearing at the appointed time. This is the case with active hemorrhages and with the menstrual flow. Again, with regard to the nature of the critical discharges by which the ovarian nismus is relieved, it would be taking a very narrow view of the phenomena, to suppose that this monthly fever of the female organism had no other effect than to let flow a portion of blood from the womb. The ovarian nismus has a more extended influence, and is relieved by a mucous, as well as by a sanguineous discharge from the generative intestine, by an increased mucous discharge from the intestinal canal, by abundant perspirations from the skin, as in fever, by saline substances

deposited in the urine. Such are the usual effects of the ovarian nîsus, and without becoming pathological, it may also find relief by causing the sanguineous fluid to transude from some other mucous membrane than the uterine; from the ulcerated surface of the skin, or even from its unimpaired structure. I shall proceed to sketch the phenomena of these critical discharges of menstruation in the order in which they have been enumerated.

CHAPTER VIII.

“The menstrual blood should be like the blood of a victim.”—HIPPOCRATES.

ON THE SANGUINEOUS DISCHARGE OF MENSTRUATION.

A MUCO-SANGUINEOUS discharge from the organs of generation is the normal crisis of the ovarian nismus. I mean by organs of generation the whole extent through which the ovum passes from the ovary to the vulva.

In many of the lower animals the surface destined to elaborate food is merely the inverted skin, so that there is but one orifice for the ingestion of food and the elimination of its residue, and it is on this plan that the organs of generation are formed in all animals, a point set at rest by the researches of Kölliker, who has demonstrated the existence of the non-striated class of muscular fibres in the integument. The generative apparatus forms a continuous canal; and although in woman this is not the case when these organs are in a state of quiescence, it becomes one canal when impelled to action by the ovarian nismus, or by sexual stimuli. At the extremity of the reproductive system is the simplest of glands—the germiparous ovary, and the ovarian nismus may so distend it with blood, and ulcerate its coats, as to let the germ burst from it as from a “matrix superior.” To receive the ovum, the Fallopian tube embraces in its leaf-like folds that part of the ovary ready to expel a germ. *So that if ovulation happens to occur at a menstrual period, the first origin of a menstrual discharge is to be found in the ovary.*

Ovulation has been studied and described by Pouchet, Ritchie, Martin, Barry, Négrier, and many others. It is, like dentition, a species of physiological inflammation, and I shall describe it in discussing the causes of subacute ovaritis. Suffice it now to state that from two to four scruples of blood have been supposed to escape from the rent ovary at each ovula-

tion, and that, should adherences prevent the fimbria from encircling the perforated ovary, the ovum and blood will pass into the peritoneum, causing peritonitis, and that from an ovarian rent of unusual dimensions has sometimes passed sufficient to fill the pelvis; cases now described as hæmatocele.

All those who have had the opportunity of viewing the Fallopian tubes recently subjected to the ovarian nismus, or after menstruation, have described them as being in a swollen and highly congested state. Gendrin, Paget, Hanover, and Letheby, in two cases, have described the blood and mucus which they found in the Fallopian tubes. In Mr. Paget's report of Mrs. Manning's autopsy, it will be seen that the fimbriated extremities of both tubes were closed, therefore the blood they contained could not come from the ovaries. It was different in appearance from the blood contained in the womb, so I believe, with Mr. Paget, that it must have been secreted from the internal surface of the tubes, and am permitted by Prof. Owen to state, that he also admits that the menstrual secretion may take place from the whole surface of the reproductive organs; and my friend, Dr. Farre, observes, in his excellent contribution to Todd's *Cyclopædia of Anatomy*, that "these collections of menstrual fluid within the tube, which I have found to be considerable in some instances, where I have ascertained beyond doubt that death had taken place during a menstrual period, are instructive, as showing that the menstrual fluid is supplied in part by the walls of the Fallopian tubes, as well as by those of the womb itself. For I have seen it in cases where both orifices of the tube were obstructed; and therefore in cases where it was not probable that the fluid could have regurgitated from the uterus to the tube."

I have therefore here a second origin of the menstrual critical discharge, and when this quantity is considerably increased beyond its usual limits, the blood may flow from the Fallopian tubes into the peritoneum—the only possible explanation of the following cases:

CASE 25.—The late Mr. John Shaw examined a young lady, who, while in full health, was suddenly seized with menorrhagia, accompanied by a succession of fainting fits, under which she succumbed. A large mass of coagulum was

found in the abdomen, but the source of the hemorrhage was a mystery until the Fallopian tubes were laid open, when it was discovered that, for the space of about an inch and a half of one of them, its lining membrane was pointed with bloody spots, from which the fluid found in the peritoneum had been rapidly poured out.

CASE 26.—Mr. Barlow—*Lond. Med. Gaz.*, Vol. XXV.—mentions the sudden death of a patient during an attack of purpura hemorrhagica, which occurred five days after a miscarriage of six months. On opening the body, blood was found in the Fallopian tubes, for small coagula still projected from their orifice. Rokitansky has twice seen this hemorrhage from the tubes in women affected with typhus fever, one of whom was pregnant. The same circumstance was noticed at the Hôtel Dieu of Paris, in several instances, during the epidemic puerperal fever of 1746.

CASE 27.—Mr. Field, of Stanhope-terrace, has mentioned the case of a lady, who, while pregnant, took fright; she died soon after, and it was found that both the womb and one of the oviducts had been ruptured, but in such a way that the peritoneal membrane remained *intact*, therefore the blood which was found in the abdomen must have come from the tubal openings.

CASE 28.—Mr. Russell—*P. M. and Surg. Journ.*, Vol. XII., p. 104—relates the case of a lady, twenty-five years of age, who had been four months married, and who menstruated a fortnight before he was called in, for sudden symptoms of collapse, of which she soon died. Large clots were found in the abdomen; the left Fallopian tube was ruptured towards its inner third; the ruptured portion was distended by a mass of fibrine, about the size of a large hazel-nut, in which no ovum was found; the walls of the tubes were thin; the uterus was enlarged and lined with decidua.

Dr. Desmond—*Med. Times*, 1852—on examining a woman who died on the second day of menstruation, found a perforation of the ovary; the fimbriated extremities of the oviduct were much congested, and contained bloody mucus like that found in the womb.

In all these cases, the observers do not seem to have ascertained whether there existed any obliteration of the uterine

extremities of the oviducts. It appears, then, that this occurrence has been principally observed in the puerperal state, in abortion, or in connexion with metro-peritonitis. That this tubal hemorrhage is not always fatal is rendered probable by the possibility of recovery from abdominal wounds, in which blood has been effused into the abdomen; those fibrous bodies which are sometimes found in the peritoneal cavity of women would be thus satisfactorily explained, their origin being accounted for, in the same manner as the fibrous bodies sometimes found in articular cavities, to which Professor Velpeau has ascribed an hæmatic origin.

The third and principal source of the critical discharge is that portion of the internal surface of the womb which is lined with the decidua membrane. Many eminent men believe this to be the only source.

It seems as if, to permit the menstrual discharge, the ovarian nismus first modified the tissues of the womb, causing it to become congested, softer, more spongy, and the blood to permeate from its mucous surface; pressure of the hand may do the same when applied to the womb of a woman deceased during menstruation. The neck of the womb was likewise found swollen by Dr. Ripault, of Dijon, and its blood-vessels varicose at the period of menstruation. The vaginal mucous membrane was congested and of a livid hue. The most obvious supposition is, that many blood-vessels of the modified mucous membrane rupture and exude the blood globules, but the blood may be propelled through microscopical fissures, as it is in Epistaxis.

The mucous lining of the generative apparatus is also impelled by the ovarian nismus, to secrete a greater amount of mucous fluid during the menstrual period. That is probably the case with the mucous membrane lining the Fallopian tube, and doubtless occurs in the abundant mucous crypts lining the neck of the womb and the vagina. Although for the better comprehension of all the phenomena of the menstrual hemorrhage, and of its attendant mucous secretion, I treat of them in separate chapters, they are indissolubly connected, being two portions of one critical discharge; a fact which is likewise proved by the chemical or microscopical examination of the menstrual discharge. Much time has been lost by some

authors in attempting to prove that the menstrual flow is only an *excretion*; others pretend that it is a *secretion*; in truth, however, it is both one and the other; for if the blood flows from the womb by imperceptible pores, as it does from the skin, in cases of vicarious menstruation, the mucus with which it is mixed to constitute the menstrual flow may be modified in quantity and nature like all other secretions. Before examining briefly the quantity and quality of the menstrual flow, I must allude to a supposed effect of the ovarian nismus on the body of the womb—the production of a decidua membrane. It has been stated by Pouchet, that a few days after the sanguineous flow has ceased, a *magma* is passed with the mucous flow, and that when examined, it is more or less extensive, elastic, and of a bluish tint. It is found to be albuminous by chemical tests, and the microscope shows that it is formed by the cylindrical epithelial cells which line the uterine cavity, but this requires confirmation.

In other cases the virgin womb produces, at each menstrual period, a smooth velvety false membrane, in everything like the decidua, except that it contains no foetus. This false membrane, as Coste remarks, would be called a product of inflammation, if met with on any other mucous surface. In other women, unmarried as well as married, this membrane may increase, combine with the solid constituents of the blood, and come away as an ovoid “mole” accompanied by parturient pains. These phenomena seem to be the result of a morbid ovarian nismus, and constitute a disease very difficult to cure, as will be shown elsewhere.

AMOUNT OF SANGUINEOUS DISCHARGE.

The quantity of the sanguineous discharge is to be measured by the rapidity of its flow, and the quantity passed: one must depend on the vague information of women, by whom it was said to have been

Abundant in	.	.	.	47 per cent.
Moderate in	.	.	.	11 „
Very little in	.	.	.	40 „

A somewhat more precise mode of ascertaining the quantity of the menstrual flow is by the number of days that it lasts.

The following table shows how long it most frequently lasts in London, in Paris and its vicinity, in Copenhagen and in the country districts of Denmark.

TABLE V.

SHOWING THE DURATION OF THE MENSTRUAL FLOW IN WOMEN.

Number of Days.	Paris and Vicinity.	London.	Copenhagen and Denmark.	Number of Days.
		1 hour in the day 2		
1	35	8	19	1
2	62	47	110	2
3	119	205	207	3
4	78	207	138	4
5	46	66	88	5
6	21	26	54	6
7	12	170	21	7
8	172	37	98	8
9—15	17	9	11	9—21
Total .	562	777	746	Total.
	B. de Bois-mont.	The Author. Collected only from the well-to-do of the lower orders.	Dr. Ravn. Communicated to the author from a statistical inquiry of the R.M. and C.S. of Copenhagen.	

This table again proves the influence of climate in diminishing the duration of the menstrual flow. This influence is confirmed by one of Dr. Robertson's correspondents, who states that menstruation in British Guinea is not marked by difficulty, pain, or scantiness, but by entire suspension or great profuseness. Blumenbach also mentions, that most of the European women transplanted into Guinea die of menorrhagia; while, on the other hand, the surgeon to Sir J. Ross's expedition informed me, that Esquimaux women only menstruate during the summer months, and then only as a mere show.

With regard to the causes of the various durations of the menstrual flow in the same latitude, Dr. Ravn has shown, that while its mean duration was four to six days in Copen-

hagen, it was four in the country districts of Denmark. It is known to be prolonged in delicate nervous women, and in those who lead an inactive and voluptuous life.

With regard to the duration of the menstrual flow, it should be remembered that the benefits of a crisis do not depend upon the *quantity* of the critical discharge, but that each woman has the standard on which depends her health, and that any deviation from this standard must be looked upon with suspicion; for if it cannot be explained by a change in the hygienic conditions, it must depend on local disorders of the reproductive organs, or on some constitutional cause, such as chlorosis, incipient phthisis, &c.

The menstrual discharge may come from the lower portion of the neck of the womb and the upper part of the vagina. This is how I account for menstruation during pregnancy, for I have found it occur with its usual pains during pregnancy oftener than is generally admitted. Denman and some other writers deny the possibility of its taking place at this time; but Dewees, Daventer, and Baudelocque attest the fact. Velpeau has seen eight well-authenticated cases. Desormeaux and Montgomery have observed cases in which the appearance of the menses in small quantities, and at occasional times, was a certain sign of conception. Dr. Graily Hewitt has noted its occurrence every fortnight instead of every month, in three successive pregnancies; and Aran mentions a woman who always concluded she was pregnant when menstruation took place; this has occurred during nine successive pregnancies, and she never menstruated when she was not pregnant. Sometimes the periodical discharge in pregnant women may be explained by varicose ulcerations of the neck of the womb, as has been stated by my friend Mr. Whitehead; but I admit, from personal observation, that the varicose distension and capillary congestion of the lower part of the neck of the womb is often so great, that blood may be perspired from that surface without its being ulcerated.

This is a subject which will again come before me when treating of varicose ulceration of the neck of the womb; but with regard to the question under discussion, I am not at all surprised that circulation having been long set to a given

periodical habit, it should find vent sometimes from the highly congested neck of the womb. It has even occurred that, at puberty, the menstrual effort has determined a considerable flow of blood from the vagina. Mr. Obré has related a case of this description, *British Med. Journal*, 1857:—Menstruation was supposed to be taking place for the first time in a girl of fourteen; flooding continued until death was caused by exhaustion, and on opening the body no blood was found in the oviducts or womb, the os uteri was closed, but there was softening of the mucous membrane lining the vagina, which was in some parts detached from the pale subjacent muscular structure. Trousseau has met with similar cases.

The menstrual nîsus sometimes causes the lower portion of the intestine to be congested and lose blood. In women this is generally the result of pregnancy, and is, to a great extent, a mechanical effect; but when produced, the hemorrhoidal affection is often influenced by the ovarian nîsus, the pain, congestion, and loss of blood from the rectum being then increased. Thus, in N. A. the menstrual flow is always preceded by the appearance of hemorrhoidal lumps for two days. With E. G. the hemorrhoidal tumours always bleed more after each menstrual epoch, and for the last few months, having lost more blood by piles, there has been less menstrual flow. With M. A. P. there has been much vaginal discharge since she has been subject to hemorrhoids. It is not difficult to understand why pelvic plethora at the cessation of menstruation should often seek to find a vent on the surface of the rectum; and accordingly it has been found that

Hemorrhoids existed to various extents in	20 per cent.
They appeared for the first time after cessation in	12 „
„ did not bleed in	4 „
„ were bleeding in	8 „
„ were considerably increased after cessation in	4 „
„ remained the same in	2 „
„ diminished at cessation in	2 „
Intestinal hemorrhage existed in	2 „

With respect to the reasons why the hemorrhoidal state should influence the lower part of the generative intestine,

Sir C. M. Clarke observes, that a discharge of mucus from the vagina is a concomitant symptom of piles; for the internal iliac artery supplies both the hemorrhoidal vessels and those which supply the vagina with blood, and it will be found difficult to restrain this discharge while the hemorrhoidal tumours continue. The labia and the nymphæ are also apt to be more swollen from the vessels being distended.

Varicose veins may be gradually caused by the menstrual nîsus. Mr. Gay has drawn attention to the fact, and observes that they occur most frequently during the first two or three years of menstruation, in connexion with either too profuse or too scanty an amount of secretion. During the first day or two of these periods, the femoral vein is very liable, under these circumstances, to become surcharged, and, from the unyielding nature and small size of the venous division of the femoral ring, dilatation very readily follows. It only requires that this repletion should be repeated for several months in succession for permanent enlargement of the vessel, with its tributaries, to be the result. The overfilling of the femoral vein is due to its connexion with the uterine plexus of vessels, which become congested at the period of menstruation, and is very often, during the setting-in of this function, unable to relieve itself by the natural processes. It is, however, much promoted by the patient taking active bodily exercise at that time. During uterogestation, the same tendency to surcharge of the femoral veins may often be observed, and, as in menstruation, is the forerunner of varicosity and its consequences.

Burns mentions a slight degree of phlegmasia alba dolens having repeatedly occurred at menstrual periods; and in two women I have seen an abundant eruption, similar to that of purpura, on the feet and legs; in one it faded when the menstrual flow was established, in the other the eruption came instead of the menstrual discharge. Dr. Beale has had a similar case.

Menstrual Deviations.—The menstrual nîsus may cause blood to flow periodically from any part of the body, and volumes might be filled with instances of this description.

Sometimes this may coincide with the regular and usual

occurrence of the menstrual flow, but most frequently with its absence.

The blood may flow from the skin, and mucous membranes of the bowels, stomach, or lungs. When the blood is misdirected to the parenchyma of the viscera, the prognosis is less favourable. A healthy working girl first menstruated at fifteen, and ever afterwards there was an imperfect ovarian nismus every month, but no menstrual flow. She died at seventeen of meningo-cephalitis, at a menstrual period. Apoplexy of the kidneys was also found. The womb was very small, and the ovaries were pale, smooth, and of the size of an almond.

THERAPEUTICAL INDICATIONS.

1. To institute the treatment so as to destroy the irritation, which may draw the blood to some particular organ.

2. To seek for and to cure any disease of the ovarian or uterine organs.

3. To direct the nervo-sanguine currents to the uterus by the means already detailed.

The quantity of the menstrual flow may be—1st. Morbidly increased. 2nd. Morbidly diminished. 3rd. It may be retained.

1. THE QUANTITY OF THE MENSTRUAL FLOW MAY BE MORBIDLY INCREASED.

The quantity of the menstrual flow is generally greatest at the beginning and at the end of reproductive life. Thus, in thirty per cent. I found this function begin by a very considerable flow; in eight per cent. it was said to have amounted to a flooding, and to have lasted from eight to ten days. Chomel mentions the case of a girl, from ten to eleven years of age, who was flooded at first menstruation. The flooding lasted several months, resisting all constitutional treatment, and was at last only cured by cauterizing the neck of the womb.

The frequency of flooding at the dodging-time is well known to the profession.

TABLE OF THE MODES OF TERMINATION OF THE MENSTRUAL FLOW.

The menstrual function terminated			
gradually in	.	.	39 per cent.
„ by a succession of floodings in	.	19	„
„ by a terminal flooding in	.	14	„
„ by alternations of a little and considerable flow in	.	10	„
„ by a sudden stoppage in	.	18	„
With respect to the periods of its occurrence, the flow appeared at irregularly protracted intervals in			
	.	13	„
It appeared at irregularly contracted periods in			
	.	2	„

B. de Boismont met with flooding at cessation in 57 out of 80 cases. Flooding is less frequent when the menstrual function is regularly established, but there is a deep-rooted and most dangerous prejudice, which makes women believe, that however great may be the discharge, if it occurs periodically, it is in perfect accordance with the ends of nature. Frequently have I drawn a parent's attention to the debility and ill-health following an habitually too copious flow, and as frequently have I obtained the same answer—"She is always so;" so difficult is it to enforce the conviction, that the fact of a girl *being* "*always so*" is the very reason for adopting such measures as should prevent her *being ever so*. Contrary to the general belief, plethoric women are not in general most liable to profuse menstruation, for this derangement is much more frequently met with in those who are nervous, irritable, and thin, and this holds good in both sexes. Bordeu has justly remarked, that many men evidently plethoric never bleed, while those most liable to do so are the thin, nervous, and irritable, who have something feminine in their appearance and constitution—a consideration which led him to admit that hemorrhage, instead of being the constant result of a superabundance of blood, depends on an hemorrhagic cachexia, or on a state of the circulating system, known by the slight febrile excitement which precedes the critical emission of blood, and a full, quick pulse, often hard,

and rebounding under the finger. In men thus constituted, the emission of the smallest quantity of blood is often followed by great relief, while profuse bleeding would be fatal, exactly as it is with the periodical hemorrhage of women. Therefore, in some very rare cases amongst women who have attained their full growth, one may look upon habitually profuse menstruation as an *autocratic* depletion, as the older authors would have said; and remember the saying of Baglivi—"Sanguis superfluis non est sistendus, sed sinendus quò natura velit."

In several cases I have known connexion to determine the *first* appearance of the menstrual flow; in one case connexion always determined a sanguine discharge; but, in general, menstruation is regularized by marriage. It is well known that during the second decade of reproductive life, inflammatory affections of the neck of the womb often give rise to flooding, while during the last decade flooding is more frequently the effect of uterine polypi or of cancerous affections.

THERAPEUTICAL INDICATIONS OF MENORRHAGIA.

1. To let the flooding continue so long as it has no effect upon the strength of the vascular system, as indicated by the pulse and the heart's action.

2. To check the flow by placing the patient in the horizontal position on a horse-hair mattress, with light covering, in a cool room, and by giving cold acidulated drinks made with the *mineral* acids, alum whey, or nauseating doses of antimony.

3. To use local measures: iced vinegar and water to the inner parts of the thighs and to the lower part of the abdomen; a lump of ice or of alum applied to the neck of the womb, or, in cases of flooding from cancer, powdered ice, according to the plan suggested by Dr. James Arnott. Should these fail, the vagina should be plugged, and for this purpose it is best to use the speculum. A far better plan is to plug the neck of the womb itself, although I am afraid this is too simple for general adoption. The os uteri being well brought in view by means of the speculum, small pledgets of cotton-wool should be successively introduced into the neck of the womb,

so as to fill it as much as possible. The muscular tissue of the neck of the womb may yield too soon, and it may be necessary to plug it again, but no hemorrhage can resist this operation if it be well performed.

4. To ascertain, when the flooding is over, whether it depends upon removable causes, such as uterine polypi or inflammation of the neck of the womb.

5. To follow the example of Fothergill, Hufeland, and Lisfranc, and prevent the floodings and other accidents of cessation, by taking very small quantities of blood from the arm, in the few days that follow the flooding, or on the non-appearance of the menstrual flow. Three or four ounces of blood taken in this way at successive months often prevents great mischief; and it must be borne in mind that at the dodging-time, or after cessation, no ganglionic centrifugal currents should be encouraged by pediluvia, hip-baths, mustard poultices, and similar applications to the lower extremities.

2. THE SANGUINEOUS DISCHARGE MAY BE DEFICIENT, OR MAY NOT APPEAR.

This most frequently occurs during the first decade of menstruation, and its deficiency or disappearance is called *Amenorrhœa*; but this expression should be carefully distinguished from the sudden suppression of the flow, and reserved for cases in which the absence of the sanguineous discharge cannot be attributed to uterine or ovarian disease, to chlorosis, or to phthisis, unless, however, the name be coupled with some adjective, to give it a distinct meaning. The absence or deficiency of the menstrual flow is frequently, as in chlorosis, unattended by pain, and seems, as then, to indicate that the deficiency depends upon the ovarian nismus being below par; but in other cases the deficiency of the menstrual flow is accompanied by great pain, and depends more upon the difficulty with which the flow finds exit than on any absolute deficiency. When this is the case, it depends on congenital or accidental stricture of the womb.

When the menstrual flow is either absent or deficient in the unmarried, it should always excite alarm, unless it can be explained by change of residence, nature of occupation, kind of food, distress of mind, or cachexia. The following

remarks of Dr. Meigs will show the urgency of considering carefully cases of checked menstrual flow:—"Interruptions of the monthly flux, produced suddenly, may leave the whole reproductive apparatus engorged, and even sub-acutely inflamed. The currents introduced into them by the spermatic and uterine arteries, and the branches of the ischiatic and the nerve streams that accompany all these vessels as their regents and moderators, these are disordered in their very structure, crasis, and chemical constitution, and the next period of elimination may fail, because the ovarian stroma is become unhealthy. But this ovarian stroma, this vitelliferous, and therein germiferous organ, has now become a disturber of the constitution. Its nervous connexion and relation to all the plexuses and nerves of the whole splanchnic system enable it to call them into sympathizing disturbance, and the health is overthrown. The emulgent artery, the cœliac, the mesenterics, and all the concomitant *cortège* of nerves are disordered, and now we have disordered renal action. The vast portal system no longer plays its healthful part in the elimination for which it is provided and appointed. Emaciation, opaque skin, dyscrasia of the blood, palpitation and irregular action of the heart, with consequent morbid states of the innervations, proceed from bad to worse, and we behold the victim of a checked menstruation labouring under all the complications expressed in the term chlorosis, or green sickness. But if all this may come from a check of an established menstrea, *à fortiori* it may spring from a hindered or prevented one."

THERAPEUTICAL INDICATIONS OF A DEFICIENT MENSTRUAL FLOW.

1. To ascertain how far it may depend upon stricture of the neck of the womb.
2. To cure any constitutional complaint by which it may be caused.
3. To strengthen the constitution by tonics, steel, and hygienic appliances.
4. When no constitutional disease is present, and the strength is improved, to use local measures to bring back the menstrual discharge.

During the three or four days previous to the probable period of the appearance of the flow, the patient should take from 5 to 10 grains of the aloes and myrrh pill, to produce moderate action of the bowels, in imitation of that by which nature so often begins, or accompanies, the menstrual discharge; the legs should be placed in a *pail* of hot water on going to bed, or a warm hip-bath may be given, with or without the addition of mustard-flour; mustard poultices may be applied to the inner parts of the thighs and to the breasts on alternate nights, but they must not be left long enough to blister the skin. Linseed-meal poultices should be also applied to the lower part of the abdomen, so as to cover the uterine and ovarian regions; and something warm should be drunk by the patient when in bed. These measures should be repeated every month, and if unsuccessful, in addition to the above, six or eight leeches may be placed on the cutaneous parts of the labia, and removed after they have drawn blood for half an hour; the oil of savine may also be given as we have already stated. Aloetic injections may be given by the rectum; warm milk, containing from twenty to thirty drops of liquid ammonia, may be given by the vagina, and electricity has often been successful.

5. The therapeutical indications of *suppressed* menstruation have been noticed in giving those of hysterical affections.

3. THE MENSTRUAL FLUID MAY BE RETAINED.

It was well known that imperforation of the hymen might lead to large accumulations of a treacly fluid, distending both the womb and the vagina, and that obliteration of the neck of the womb from its inflammatory lesions might lead to the same result. Scanzoni pointed out that flexures of the womb might so intercept the menstrual flow as to distend the organ; but Drs. Bernutz and Goupil have carefully investigated the phenomena of these cases, and have shown that partial retention of the menstrual fluid is frequently caused by chronic inflammation of the neck of the womb, and that, however produced, when retention is complete, it may cause the regurgitation of the menstrual fluid into the peritoneum, and thence peritonitis. I shall again return to this subject when discussing the abusive action of caustics applied to the neck

of the womb; but I refer the reader to the first volume of Drs. Bernutz and Goupil's work for a complete statement of all the facts bearing upon this matter.

QUALITY OF THE MENSTRUAL DISCHARGE.

To use Hippocrates' expression, the menstrual critical flow should be pure blood, like that of a victim, but mixed with an amount of mucus, which increases towards the beginning and the end of the menstrual period.

It is interesting to know, on the authority of Robin, that menstrual blood may be distinguished from other blood. This microscopist thus concludes a memoir on the subject—*Annales d'Hygiène*, October, 1859:—1. Menstrual blood differs under the microscope from blood drawn from the vessels by the mixture with the sanguineous globules of epithelial cells and leucocytes termed mucous globules; the former proceeding from the epithelium of the utero-vaginal mucous membranes, and the latter from the surface of these mucous membranes. 2. The spots produced by menstrual blood contain elements not found in those caused by ordinary blood, and which are held in suspension by the mucus of the genital passages carried away by the blood, consisting principally in epithelial cells and in the leucocytes of mucus. 3. By a microscopical comparison these two descriptions of blood can therefore be distinguished.

When the menstrual discharge differs from this standard, it indicates, as extensive statistical inquiries have proved, some morbid disturbance of the reproductive system. The inquiry is of course liable to the uncertainty always attached to facts which only rest on the patients' assertions. Thus the menstrual discharge at the mean period of reproductive life has been said to have been—

Bright in	25 per cent.
Dark in	55 „
Pale in	12 „
With clots in	40 „

The menstrual discharge may be—1st, too serous; 2nd, too fibrinous; 3rd, perverted.

The menstrual discharge may be entirely serous. Thus:

1. J. P. Frank, in his Treatise of Practical Medicine, and Dr. Teissier, of Lyons, relate cases in which a purely aqueous discharge from the womb, occurring every month, was substituted for the usual secretion of blood. The patients were not in the family-way. These are rare cases; but frequently the menstrual discharge is too serous, particularly during the first decade of reproductive life; not only in confirmed chlorosis, but in scrofulous subjects, and in a considerable portion of the inhabitants of large towns, who are semi-chlorotic and without stamina. Whenever the flow is sero-sanguinolent, it is a sign of ill health, and until it has regained its bright colour, a chlorotic patient cannot be called cured.

2. The menstrual discharge may be too fibrinous.

When the menstrual discharge is "clotty," it shows that it has been retained in the womb, and ejected with more or less pain, after which the womb again lets the blood coagulate in its cavity, and then again expels it. This occurs principally during the second decade of reproductive life, when inflammatory uterine affections are most frequent. Sometimes pseudo-polypi or irregularly round bodies are expelled from the womb; they are of a dirty white colour, elastic, and the microscope shows them to be entirely fibrinous, or modified clots of the menstrual blood.

3. Perverted menstrual discharge.

This may be green, brown, or like tar, and of an offensive smell. It is sometimes compared to what is passed from the womb during the last days of the puerperal period. When this is the case in the last stages of the function it need not create alarm, but when it occurs during its regular course, it must be considered indicative of local or of constitutional disease, and the patient must be carefully examined and watched. These last modifications in appearance seem to depend upon a vitiated state of the mucous secretions of the utero-vaginal canal, and have doubtless given rise to the strong prejudice, formerly universally accepted, respecting the noxious properties of the menstrual fluid. A prejudice confirmed by Pouchet's assertion, that a day or two previous to the appearance of the flow the vaginal mucus acquires an odour *sui generis*.

THERAPEUTICAL INDICATIONS WHEN THE MENSTRUAL
DISCHARGE IS PERVERTED.

1. When the menstrual flow is serous, sero-sanguinolent, or perverted, tonics and steel are indicated.

2. When the menstrual flow is clotty, or too fibrinous during the passage of the discharge, it is necessary to give opiate enemata, and after its subsidence, to examine if it be caused by uterine inflammation or a stricture of the neck of the womb.

CHAPTER IX.

“In a portion of the cervix uteri, comprising only three rugæ and their interspaces, upwards of 500 mucous follicles were easily counted; so that it is within the limits of moderation to say that a well-developed virgin cervix uteri must contain at least 10,000 mucous follicles.”

DR. TYLER SMITH.

ON THE MUCOUS DISCHARGES OF MENSTRUATION.

I HAVE said that the critical discharge from the organs of generation is mucous as well as sanguine, that it generally constitutes the first and last part of each periodic crisis, and the first and last effort of the whole menstrual function; that it is often periodically repeated for years previous to the appearance of first menstruation, and is in some rare cases completely substituted for the sanguineous discharge. Thus, the first result of the ovarian nîsus is to determine pain; the second is to increase the habitual mucous secretion; the third is to determine the flow of blood. Having considered the first and third results, the second now demands attention. The following statistics of leucorrhœa in relation to the menstrual function only deserve the limited credence which can be awarded to information founded on the assertions of patients. In some of the cases the discharge may have been caused by inflammatory affections of the womb or the vagina; but upon the whole, I think the statements represent the action of the ovarian nîsus on the generative mucous surface.

First menstruation was preceded by an increased amount of vaginal secretion in 85 cases out of 250. Similar results have been obtained by other observers. Thus,

Dr. Blatin found it in 15 women out of 139, or in 1-9th of cases.

Marc Despine in . 26 „ „ 53 „ $\frac{1}{2}$ „

B. de Boismont in $\frac{1}{4}$ „

This increased mucous discharge generally lasted from one

to six months, and often longer, in women with flaxen hair, blue eyes, pale skin, and other attributes of a lymphatic temperament. Thus, B. de Boismont found that in thirty-one lymphatic women, subject to leucorrhœa previous to menstruation, the mean average of first menstruation was nineteen years four months instead of fourteen years. These results are confirmed by my own statistics. This has been spoken of as arising from the influence of leucorrhœa in retarding menstruation by those who, taking a partial view of the phenomena, did not observe that it was of itself a critical discharge of an ovarian nîsus, insufficient to cause a discharge of blood. The critical mucous discharge, however, is less effectual than the sanguineous, and only relieves, without entirely removing, the cerebral and spinal symptoms. Such was the case with eight women in whom a mucous discharge occurred regularly every month for many months before first menstruation, and in the case of F. D., who first menstruated at ten. From ten to seventeen years she had a copious mucous discharge from the vagina almost every month; at seventeen she became regular. Such cases have been described by old authors under the name of *menstrua alba*, or *palida*, or *menorrhagia alba*, vicarious or substitutive diarrhœa, and they may be considered as indicating not uterine disease, but a morbidly diminished ovarian nîsus; for in such women the mucous discharge is often replaced by a sanguineous discharge when the powers of vegetative life have been increased by stimulating emotions and tonic medicines. I have already said that the lymphatic temperament, a delicate constitution, and inhabiting large towns, produces an increased amount of vaginal secretion; and the peculiar constitution most liable to this vicarious leucorrhœa, as well as the nature of the treatment required, will be shown by the following case:

CASE 29.—M. A. N. applied for relief at the Paddington Dispensary, Feb. 13, 1850. She was sixteen, tall, large-boned, with red hair, blue eyes, thick lips, puffy chin, and every appearance of a strongly-marked lymphatic temperament, an inference confirmed by the fact that when a child she was very subject to glandular swellings. She had lived almost always in London, and first menstruated at fifteen under peculiar circumstances. While nursing a boy for small-

pox, she caught the disease, took to her bed, and before the eruption came out the menstrual flow made its appearance in very great abundance, lasting four days. The patient recovered well from the small-pox, and menstruation returned two months after its first appearance. Previous to the first menstrual flow there was no leucorrhœal discharge, but it appeared after the second, and has lasted ever since, sometimes in a slight degree, at others being very abundant, but always painless and of an inoffensive quality. During the last year, in the place of the sanguineous flow a very abundant discharge came on regularly every month, lasting from three to eight days, and was accompanied by pains exactly similar to those felt during menstruation. About the time of the second appearance of menstruation—whether before or after she cannot remember—there appeared on the elbow a large patch of eczema, which disappeared to reappear abundantly on her legs and thighs, without ascending higher. This skin affection was in general indolent, except during the spring and summer, when it became endowed with great activity—lately the scalp having become affected, she has had her head shaven to relieve the intense feelings of heat and itching. The digestive functions were in a state of perfectly good order. After purging the patient, I put her on a course of steel and tonics, ordering a tepid bath every week. When the next menstrual period came on, the discharge was sanguineous instead of mucous. It afterwards became regular, returning every three weeks with pain, and being always preceded for two or three days by a white discharge. On March 3rd, 1851, she consulted me for some large patches of eczema on the head, and I then learned that since the last application for relief, menstruation had continued regular, but that lately the leucorrhœa had been abundant, and was always more so when the secretion from the diseased portions of the skin was diminished. In such a case it would have been just as absurd to employ astringents or caustics to the vaginal surface, as to smear the mucous membranes of the nostrils with nitrate of silver to cure a constitutional tendency to cold in the head.

In another case, where there was no leucorrhœa at intermenstrual periods, but in which the menstrual pains had no

other relief than an abundant leucorrhœal discharge, the patient, of her own accord, stopped this flow by injections of cold aluminous water. The attendant pains were more severe, particularly that habitually experienced at menstrual times in the left ovarian region.

Catamenial leucorrhœa, or an increased amount of mucous discharge from the vagina, before and after each menstrual epoch is the rule :

For in 200 cases an increased amount of mucous secretion		
preceded and followed it in	160	cases.
Catamenial leucorrhœa preceded only in	2	„
Catamenial leucorrhœa followed only in	4	„

Those women in whom a leucorrhœal discharge precedes first menstruation are most liable to menstrual leucorrhœa.

Leucorrhœa may appear between two menstrual epochs : this is a very frequent occurrence in women subject to the weakening influence of civilisation, for I find it occur in 20 out of 94 cases, and as it is attended by no pain, it is merely suggestive of greater cleanliness, and not of treatment. Some of the cases in which I have seen this persist with the greatest obstinacy through life, without in any way interfering with the patient's health, were in strong plethoric women—a remark coinciding with Friend's experience, although somewhat contrary to the dictum of theory or to received opinions. Leucorrhœa is frequent during pregnancy and in women who cannot suckle.

Of 260 women in whom the menstrual function had ceased, 143 had never been subject to leucorrhœa ; of the remaining 117,

The vaginal secretion was increased at cessation in 77 cases.		
It was diminished in	24	„
It remained stationary in	16	„

As previous to first menstruation, so after its cessation, the diminution of the ovarian nîsus may be thus indicated by the substitution of a periodical mucous discharge for one of blood. In one case this occurred regularly every month for a year, for eighteen months in another, in a third for two years.

Thus the natural history of woman shows the frequency

of the increased mucous discharge from the generative intestine. Pouchet has proved that this discharge is an inseparable portion of the phenomena of menstruation; and the motto of this chapter indicates that the phenomena rest on an anatomical basis. It must be borne in mind that, under the term leucorrhœa is meant an increase of all the habitual secretions from the whole mucous surface. There is the alkaline, thick, transparent, glutinous fluid from the cervix, the chronic catarrh of the oviducts, according to Rokitanski, and the acid creamy secretion from the vagina, so well studied by Mr. Whitehead. In his work on *Abortion and Sterility*, he observes that the mucus of the vagina always possesses acid qualities, and that the discharges from the interior of the uterus are as constantly alkaline. "This point I have verified," says he, "by numerous trials. In the ordinary state I find, moreover, that the secretion not only of the vagina but of the os and external surface of the cervix is acid, while it becomes alkaline within the labia uteri. If a piece of litmus paper be applied to the surface of the os uteri, it is instantly reddened, but the blue colour is restored by passing it within the cervix. The margin of the cervical canal, and the limits of the villi covered by squamous epithelium, and the commencement of the villi covered by dentated epithelium, seem to mark the division between the acid and alkaline secretion. It is to the alkali that the secretion within the cervix owes its viscosity and transparency, while the curdled appearance of the vaginal mucus is owing to the presence of the vaginal acid. The acid of the vagina is quite sufficient to more than neutralize a moderate quantity of the alkaline secretion of the cervix, and when any secretion from the cervical canal enters the vagina, it becomes curdled from the coagulation of its albumen. The same thing may be imitated out of the body. On the addition of a little weak acetic acid, the thick viscid mucus of the cervix becomes after a time changed into the curdy mucus of the vagina." This fact is important; for, in common with many other writers, Mr. Whitehead thinks a profuse secretion of the uterine mucus "extremely rare," whereas it is remarkably common in leucorrhœa; but the fact has been masked by the circumstance of its becoming altered when it descends into the vagina, so

as to resemble the strictly vaginal mucus; and its source has thus been attributed to the vagina instead of to the cervix uteri. Mr. Whitehead is of opinion that the acid mucus of the vagina is intended to prevent the coagulation of the catamenial fluid in this canal; but I believe that in addition to this, the different chemical conditions of the surface of the os uteri and of the canal of the cervix play an important part in the pathology of these structures. During the catamenial flow, the acid vaginal mucus probably has the effect attributed to it by Mr. Whitehead, that of preserving the fluidity of the catamenial discharge, a small quantity of this mucus having the effect of preventing its coagulation even out of the body. The immediate effect of the acid mucus upon the secretion of the cervix uteri is, to cause its coagulation in the way already pointed out.

The import of leucorrhœa is not only explained by its constitutional causes, but by the fact of its being often brought on by emotion, violent altercations, or anger, which causing metrorrhagia in some, will give rise to leucorrhœa in others. It is sometimes caused by strong sexual desires, and the ecstatic trances of many holy, loving women have found a crisis in an increased mucous flow from the vagina. A more extensive view of a natural phenomenon is not uncalled for at the present time, when those who are without experience in uterine pathology are placed between extreme opinions; for while, on the one hand, they are told that, "in nineteen cases out of twenty, when a woman seeks professional advice for leucorrhœa, she will be found, on examination, to be suffering from some inflammatory disease of the uterine cervix," they are informed, on the other, that uterine ulceration seldom or never exists; while a third party says, "Yes, inflammation and ulceration are frequent, but do not originate the increased vaginal discharges. Ulceration of the womb, its induration, amenorrhœa, dysmenorrhœa, menorrhagia, sterility, and abortion are all excited by the passing of mucus from the neck over the lips of the womb." There is some exaggeration in the first statement, pitiable blindness in the second, and the third is only true of a very limited number of cases; for, as Mr. Whitehead has stated, the acid secretions of the vagina are generally sufficient to annul the

injurious effects of the alkaline mucus descending from the cervix uteri. The just view of such cases in the nineteenth century is that entertained by the first medical authority after the divine old man, Hippocrates, Galen, who called this disease a rheum of the womb, the slight hypersecretion of the vaginal mucous surface having no more alarming import than that of the mucous membrane which lines the nostrils; and to this slight affection should the term *leucorrhœa* be given. When, however, the discharge, instead of being white and unaccompanied by pain, is yellow or green, and attended by much pain in the back and thighs, and if it has been allowed to continue long enough seriously to disturb the functions of the mucous surface, the case alters, for in addition to the constitutional employment of steel, iodine, or mercury, local applications may be necessary—a fact only to be determined by an accurate examination.

THERAPEUTICAL INDICATIONS.

1. When the ailment is slight, and unattended by severe spinal neuralgia, some diaphoretic drinks at night, additional clothing, and the avoidance of cold and damp air, will remove it.

2. When the discharge is considerable, and attended by much pain, a digital examination will intimate, by the increase of temperature and the pain, whether the vagina be acutely inflamed; and it is then desirable to relieve this morbid state by emollient injections, tepid baths, cooling medicines, and repose.

3. Should an increased amount of vaginal discharge and spinal neuralgia persist after the cure or the alleviation of vaginitis, then it is to be supposed that the disease is in the womb itself, and a specular examination becomes necessary, to ascertain whether it depends upon a state of hypersecretion of the numberless mucous follicles lining the internal cavity of the neck of the womb, or upon ulceration of the os uteri, in which case surgical treatment is required. To detail this treatment, it would be necessary to repeat much of what the reader will find fully explained in the second part of this work.

CHAPTER X.

“L'attention a besoin d'être éveillée pour appercevoir même les choses les plus ordinaires.”—DUPUYTREN.

ON THE GASTRO-INTESTINAL MUCOUS DISCHARGES OF MENSTRUATION.

It will be remembered that in those morbid functions of vegetative life called fevers, the impelling force frequently diverts, at the same time, a critical discharge from more than one surface of the body. Thus, while the urinary deposits are sometimes *critical*, there may also be a critical diarrhœa or perspiration ; or, in other words, the ganglionic nervous system has the whole vascular system under command, and may cause it to concur more or less for the purpose of expelling what would be injurious. So it is with that form or portion of ganglionic nervous power which we call the ovarian nisus, which, while separating from the generative intestine a muco-sanguineous discharge, often impels the gastro-intestinal surface to an increased exhalation of mucus. The reciprocal influence of the womb and of the menstrual function on the stomach is proverbial ; but when, some years ago, I asserted that menstruation was always more or less accompanied by diarrhœa, many midwifery practitioners denied the statement. When, however, one reflects that the organs of reproduction, as well as the intestines, are principally animated by the ganglionic nerves, that the spinal nerves of the womb and of the intestines arise from the same part of the spinal cord, that the veins of the uterus communicate mediately with the portal system, and that the last portions of both canals are contiguous, these being relieved by the same vessels, and supplied by nerves either derived from the same ganglionic nervous plexuses, or from the same portion of the spinal cord, it is not surprising, that when the uterine discharge is arrested, the nervous energy, and the sanguineous current which used thereby to find vent, should deviate to the intestinal surface.

Such being the anatomical connexions of the intestinal and reproductive organs, I am prepared to understand that every portion of the nutritive may sympathize with the generative intestine. Thus, like Siebold and Churchill, I have seen cases in which, the menstrual flow being absent, there was profuse salivation, lasting for several days. I have noted salivation as a symptom of morbid menstruation and of uterine disease, and such exceptional cases remind one of the occurrence of the same symptom during pregnancy. In most women the tongue is more or less furred, the breath fœtid, the taste perverted. Nausea marks the hyperæsthesia of the glosso-pharyngeal nerve. Many cases of dysphagiâ are recorded in this work, where menstruation was accompanied by the expulsion of a large quantity of ropy mucus secreted in the pharynx and œsophagus. All these are rare cases deserving to be noticed as instances of the symmetry of all the performances of nature; but it is not so with vomiting and diarrhœa, which deserve careful study on account of their frequency whenever the reproductive organs are in a state of great activity.

VOMITING.

The frequency of this symptom during pregnancy is well known, and need only be mentioned; it is likewise very frequent during menstruation. E. A. was always dreadfully sick the day before menstruation; with M. H. the sickness lasted three days; with B. S. eight, ceasing when the flow appeared; with F. N. the sickness lasted eight days before, and until the second day of the flow. In all these cases nothing was brought up but mucus; whereas in J. B., a chlorotic widow of twenty-eight, menstruation was regular, but scanty, accompanied by epigastric pain, and followed by two days of vomiting, bile being brought up. These symptoms occur generally in the first part of the monthly crisis, and when carried to a great extent, and prolonged beyond the usual time, chlorosis, in one of its numerous forms, almost inevitably follows. Flatulency, vomiting, and fancies after unusual articles of food, were noticed by B. de Boismont in 64 out of 360 cases. The same gastric symptoms, only greatly exaggerated, frequently constitute the prodromata of first menstrea-

tion, lasting for a long time, and often seem to be the means of bringing about the chlorotic deterioration of the blood. The same gastric symptoms, carried to an extreme, constitute a large portion of the sufferings of women at the cessation of menstruation. Dr. Butler Lane has justly remarked:—"Nothing can be more common than to find severe biliary derangement occurring at or about the period of menstrual secession: and looking at the great physiological change which then takes place in connexion with hepatic development, it is naturally to be expected. A woman will complain of being bilious—viz., there may be a bitter, oily taste in the mouth, a sensation of burning in the throat, frontal headache, nausea, and even vomiting, the urine highly coloured, the bile abounding in the alvine dejections, and perhaps causing a heat and a stinging sensation in the rectum, the tongue furred, a biliary tinge pervading the cutaneous surface." G. N. had never been troubled with bile, but since cessation she has had repeated attacks of jaundice. P. K. is a strongly-built woman, of a sanguine temperament. The menstrual flow has been dodging her for the last eight months. Up to that time she had enjoyed good health; but since, in spite of purgatives, alteratives, and tonics, I have not been able to set right the gastro-intestinal functions, or to improve the appearance of the tongue, which is permanently coated with a yellow fur. A patient who has been singularly prone to sickness from childhood has slight ulceration of the os uteri, and I cannot touch it without causing retching, which always occurs whenever connexion takes place. She has had several children, and this tendency to sickness has been the bane of her life.

Many shades of sickness frequently attend diseases of the womb and ovaries, and it constitutes the most distressing symptom of some cases of inflammation of the body of the womb. I might dilate on this subject; but I shall refer the reader to the third volume of the *Transactions of the Obstetrical Society*, in which I have more fully discussed it.

DIARRHŒA.

The ovarian nismus frequently determines diarrhœa, or constipation, or both, at different periods of the menstrual func-

tion. The following table will show at a glance how the bowels are acted on by the menstrual function:—

TABLE VI.

STATE OF THE BOWELS DURING HEALTHY MENSTRUATION.

	Nature of Intestinal Disturbances.	Number of Observations.
Bowels relaxed.	Before the menstrual flow	112
	During the menstrual flow	173
	Before and during the menstrual flow . .	19
	Before and after the menstrual flow . . .	22
	After the menstrual flow	4
	Relaxed before, but confined at the menstrual flow	46—376
Bowels confined.	Before the menstrual flow	6
	During the menstrual flow	171
	After the menstrual flow	1
	Before and after the menstrual flow . .	2
	Before and during the menstrual flow . .	5—185
Bowels undisturbed.	Regular as usual	192
	Confined as usual	2
	Relaxed as usual	3—197
	Total	<hr/> 758

From this it appears, that while the bowels remained undisturbed in 197, their functions were modified during the menstrual function in 561 women, and when diarrhœa preceded the menstrual flow, the action of the bowels was generally suspended during menstruation, until the cessation of the catamenial period. My researches have been confirmed by Drs. Aran and J. Vandeën, of Zwolle—*Presse Méd. of Brussels*, No. 36—who there advanced “as a fact hitherto unnoticed, that, while after parturition, constipation was the rule, diarrhœa was of frequent occurrence during menstruation.” It would be nearer the truth to say, that menstruation and parturition so far resemble each other, that diarrhœa frequently occurs at the beginning, and constipation towards the end of both functions.

Diarrhœa is in general unattended by pain, and consists in the daily passing of three or more motions, rendered loose by an increased secretion of mucus. When the stools are much altered in appearance during the monthly crisis, it

generally indicates idiopathic disturbance of the intestinal functions. In chlorosis, habitual constipation frequently coincides with the menstrual periods, and in some of the worst cases of that disease mucous diarrhœa may occur instead of the menstrual flow. Thus, Mrs. M., a stout lady, aged forty, has habitually three motions a day, has always diarrhœa during menstruation, and when the cholera raged, had sixteen motions a day, although she felt quite well. J. B., now twenty-seven, and chlorotic, first menstruated at fourteen, always irregularly, mostly every seventh week. Sometimes, when she thought the menstrual discharge at hand, she would pass eight or ten liquid motions, per day, for four or five days, and this would relieve both the spinal pains and the pseudo-narcotism. In other cases, the alvine evacuations are often dark and offensive to the smell, looking like tar, or like decomposed animal matter.

I drew attention to leucorrhœa being, in some rare cases, substituted for the sanguineous discharge, and in still rarer instances, diarrhœa is occasionally substituted. Thus, Baudelocque has recorded the case of a woman, then forty-eight, who since the age of fifteen had every month, for four or five days, three or four motions every day instead of menstruating. Another interesting case is cited by Mr. Girdwood, in which the ovarian orgasm, in absence of the womb, caused diarrhœa every month.

As a precursory symptom of first menstruation, diarrhœa seldom occurs. I have noted it in but three of 349 cases. This contrasts with the frequency of gastric symptoms at the same period of life. As a symptom of cessation, I have noticed diarrhœa in 12 per cent. It occurred irregularly in 8 per cent., but in 4 per cent. it was vicarious of menstruation, and occurred every month, as is the case more frequently with leucorrhœa after cessation. I have met with a case where there had never been any premonitory diarrhœa; nevertheless, the cessation of menstruation was for five years followed by an habitual looseness of bowels, occurring two or three times a day, generally without colics. The patient enjoyed good health during that time, and is now a stout and tolerably healthy woman. At or after cessation, the motions are frequently bilious, and scald the passage; but

they may be different. Thus, Dr. Day notices the salutary effects of diarrhœa, consisting of watery evacuations, taking place without apparent cause every three or four months after the cessation of menstruation; and he alludes to a lady, eighty-seven years of age, in whom for the last thirty years this had occurred with great advantage. As a general rule, however, when diarrhœa has habitually accompanied menstruation, there is, at the change of life, a gradual diminution of both discharges, the cessation of the one marking the termination of the other.

Connexion has been known to cause the involuntary expulsion of fæces.

Diarrhœa not unfrequently occurs without apparent cause during pregnancy, and if allowed to proceed, it may bring on abortion; although, in one case, I have known loose motions to be passed twenty times a day during pregnancy, without the mother losing flesh, or the child being born before the full time; but others are less fortunate. Mr. Girdwood has twice met with dysentery in early pregnancy, and if this were accompanied by a terrified look and suspicious circumstances, it might be considered a case of poisoning. Under such circumstances the urine should be analysed, for if the dysentery were caused by poison, it would be found in the urine. Dysentery is rare in this country, but in India and warm climates it frequently accompanies pregnancy.

Diarrhœa is the usual effect of labour, while constipation generally follows parturition, the meddlesome interference with which, in this country, by purgatives, is still productive of much mischief. In India, on the contrary, dysentery is a frequent attendant on parturition, and in the Indian papers "death in childbed" is generally coupled with "of dysentery."

With respect to the frequency of diarrhœa during ovarian and uterine diseases, I may say that, in general, whenever there is a great increase of uterine disturbance, a tendency to diarrhœa may be expected. Dr. B. Lane states, that in about half his cases wherein diarrhœa occurred during menstruation, dysmenorrhœa also existed. Dr. Rigby makes a somewhat similar statement respecting the majority of the cases of dysmenorrhœa he has met with; and I have several times

seen diarrhœa occur in cases of menorrhagia, both flows progressing and abating together.

I find that chronic inflammation of the body of the womb generally causes irritation of the lower bowel, which is evidenced by a considerable increase of mucus accompanying the motions, sometimes by small quantities of blood, sometimes by frequent tenesmic diarrhœa, sometimes by constipation, which depends on a want of power to expel the fæculent matter, as if by a kind of paralysis of the rectum, and sometimes upon the constriction of that portion of the intestine—a mechanical effect of its pressure by the retroverted womb. Scanzoni, Aran, and Nonat confirm my previous statements; the latter treats of this, as a special form of enteritis, and Indian practitioners will remember that dysentery accompanies uterine disease.

Inflammation of the neck of the womb seldom reacts on the intestine, although, judging from several cases, Dr. Bennet has concluded that diarrhœa often co-exists with inflammation of the neck of the womb, and expects the one when the other is present. Out of twenty cases of uterine tumours, Dr. B. Lane found that the bowels were unaffected in four instances; constipated in two; relaxed in fourteen. Dr. Tunstal, of Bath, has also noticed the frequency of constipation as an accompaniment of chronic ovarian disease, and thinks that constipation is to be regarded as the rule, in those diseases of the ovario-uterine organs characterized by deficient action; for, as the presence of the menstrual nîsus is as much felt by the intestines, in their particular way, as by the womb, so, when the womb is deprived of its critical discharge, the intestines are likewise deprived of theirs, as Freind had already stated. The obstinacy of constipation in chlorosis led many practitioners to rely principally upon purgatives, long before Dr. Hamilton, of Edinburgh, made them his sole means of treatment. Those cases are indeed exceptional where serous discharges last long in anæmic women, in whom menstruation has long been suppressed. This circumstance, as well as the state of the skin, lead one to suspect this serous diarrhœa to be caused by enteritis, often depending on a tuberculous diathesis. This fact being established, it is useful to seek to account for it by our knowledge of the laws

by which it may be governed. Formerly it would have been deemed a sufficient explanation to say, that it was the result of sympathy, or that it was caused by the transmission of irritation from the generative to the intestinal apparatus; but the light which Dr. Marshall Hall has thrown on the physiology of the nervous system enables us to refer the phenomena to reflex action; for, if the abdominal and not the respiratory organs are frequently implicated by uterine disturbance, it may depend on the fact, that the nerves which surround the womb and the intestinal organs arise from the same part of the spinal cord, while those going to the respiratory and circulating system, arising from a much higher portion of the spinal marrow, are not implicated in uterine disturbance. No other explanation is required than that already found sufficient to explain so many other symptoms of menstruation. An ovarian nismus which has been able to disturb the functions of the brain and spinal cord may certainly disturb the functions of the gastro-intestinal surface, since, as well as the generative apparatus, it is endowed with ganglionic nerves. A neural current impels the blood outwardly from the womb; but before this current effectually succeeds in doing so, the same, or at least a parallel nervous current, has determined a similar outward flow of mucous secretions from the intestines, in more than fifty per cent. of the women I have questioned; and, in practice, nature is often imitated with great advantage, the uterine being hastened by accelerating the intestinal discharge. Dr. B. Lane has sought to explain the intestinal disturbance during menstruation, by admitting a certain balance to exist between the biliary and the uterine secretions, and he says:

“I am therefore inclined to believe that constipation, to a greater or less extent, most commonly coincides with menstruation when the uterus is in a healthy condition, its function exerting a derivative influence in reference to the liver. On the other hand, if congestion of the liver be consentaneous with the period of uterine congestion, spontaneous biliary secretion, simultaneous with the menstrual flow, may afford relief; but if there be a still higher degree of hepatic congestion, it may occasion mucous diarrhœa, as it is known to do on other occasions, and that more especially if the irritative

influence of dysmenorrhœa be present. Such I believe to be causes of diarrhœa during menstruation, and, as a general rule, I consider it indicative of a morbid tendency."

Sir C. M. Clarke had already noticed that in some women a deficiency of bile and a constipated habit of the bowels coincided with an increased monthly flow at protracted intervals, and with feelings of giddiness, sleepiness, pain in the head, indistinct vision, a waving appearance when the eyes are open, and a sensation of specks when they are closed. These symptoms are relieved by a spontaneous bleeding of the nose, or by menstruation.

With respect to the intestinal disturbance occurring at the cessation of menstruation, and through life, as a concomitant of chlorosis, suppressed menstruation, and uterine inflammation; I think it may fairly be attributed to undue activity of the biliary apparatus, determined by a disturbance of that balance between the biliary and the reproductive organs which is founded on vascular as well as on nervous association. The menstrual flow removes from the system a certain amount of carbon; and when the menstrual flow is not stopped by some complementary function, such as pregnancy or lactation, this carbon remains to be disposed of, and is generally removed by the biliary and intestinal surfaces, or by the cutaneous, in the shape of sweats. This removal of carbon from the system by the menstrual flow has been shown by the interesting experiments of Andral and Gavarret. These accurate observers found that, as in the male, so in the female, from eight years of age to puberty, there was an augmentation in the quantity of carbonic acid gas excreted by the lungs; but as soon as ever menstruation took place, women continued to excrete the same quantity of carbonic acid as before, while in man the quantity went on increasing. From experiments made on twenty women, it appears that during the whole of the time comprised between the first and last menstruation, the strongest and healthiest only excrete, per hour, a quantity of carbonic acid representing gr. 6·4, or the same quantity as before puberty; while men get rid of gr. 7·4 per hour before their fifteenth year, and gr. 11·3 per hour from fifteen to forty years of age.

After cessation of the flow, the lungs more largely secrete

carbonic acid; for in women aged from thirty-eight to forty-nine, and who had ceased to menstruate, the quantity of carbon excreted by them per hour has been shown to rise from gr. 6·4 to gr. 8·4. But the balance between the respiratory and the menstrual function is even more forcibly shown by the fact, that, at whatever period of life, whenever menstruation is diminished or suppressed, more carbon is exhaled per hour by the lungs, and less when the menstrual flow has been re-established. This circumstance perhaps explains the influence of suppressed menstruation on the production of consumption, and shows that by re-establishing the menstrual flow one does *really* take a load from the lungs in which incipient tubercles are deposited. This explains to a certain extent the benefits derived by Dr. Burslem from the re-establishment of menstruation in the first stage of consumption. It is interesting to notice that if the quantity of carbon exhaled by the lungs is less during menstruation, it is less also in both sexes in hot climates, where, though biliary affections abound, consumption is scarce.

The flatulent distension of the stomach and of the intestines is a very common symptom of deranged menstruation and of uterine disease. Sometimes "they work," and are audibly agitated by spasmodic contractions, at others the bowels are painfully distended by flatus, which is often the case at the change of life, and has even lead to the supposition of pregnancy or of an ovarian tumour. This flatus is secreted by the gastro-intestinal mucous membrane. I have patients in whom distension of the stomach and continued eructation is the instant result of worry and vexation.

THERAPEUTICAL INDICATIONS.

An acquaintance with the very intimate organic relations existing between the generative and intestinal mucous surfaces gives the key of much empirical practice, and will therefore enable one to act in future with that full confidence only to be obtained from knowledge. It explains how one ought to seek by gentle purgatives, as well as by many other means, to promote the first appearance of menstruation when its urgency is evident to the medical observer; how the same plan should be adopted when menstruation is acci-

dently suppressed, as in chlorosis; and still more how, at the cessation of menstruation, the biliary apparatus should be systematically relieved from the excess of blood then thrown upon it, by the long-continued action of gentle purgatives. It likewise shows the dangers of purgatives when too powerful, or when given during the period of menstruation. A change of type from the normal to the morbid, or the suppression of the menses, may then be anticipated; while drastics at cessation tend to prolong, what nature has determined to discontinue.

During the prodromata of menstruation warm purgatives are required. The myrrh and aloes pill is good; and I frequently prescribe the soap and aloes pill of the Pharmacopœia, ordering five or ten grains to be taken with the first mouthful of food at dinner. The supposed tendency of aloes to cause hemorrhoidal affections is a reason for giving it when one wants to stimulate that part of the generative apparatus which is in the immediate vicinity of the rectum, but I do not remember having seen the frequent use of aloes cause hemorrhoids more than once; and Aran never, although he frequently used the drug in very large doses.

When menstruation is irregular and painful, I have great faith in sulphur given regularly every night. I think it acts as favourably on the capillaries of the womb as it does on those of the rectum.

When giving purgatives at cessation, one must bear in mind that the menstrual flow sometimes ceases, by a gradual diminution of the quantity of the secretion and the time it occupies; sometimes by a series of irregularities in the quantity, quality, and epochs of its appearance; sometimes by a terminal flooding. Although nature occasionally chooses this last termination, it is not right to risk the possible dangers of its induction by the exhibition of purgatives energetic in their action. It is injudicious, then, to give purgatives just before the menstrual epoch, for they might increase the flow which nature seeks to diminish; and it is more prudent to prescribe the frequent use of the milder opening medicines, which may diminish by degrees the plethora of the abdominal viscera. In some women, after cessation, the stock of vital productivity is fairly exhausted, and purgatives are not abso-

lutely required ; but in most, there is a superabundant nervous energy and a superabundance of blood ; for that supply which was formerly sufficient for the maintenance of both mother and offspring, can thenceforth only be expended on the woman's frame, in which the circulating system tends to assimilate to that of man. This superabundance of blood and nervous energy may, after cessation, be often kept under by the frequent use of purgatives in small doses ; the intention being not to bring on a return of the menstrual discharge, but to diminish abdominal plethora, and the necessity for that plethora seeking a less manageable safety-valve ; and as it may be many months before the constitution can settle down, it would be advisable to consult the patient as to what medicine she has best tolerated. The nature of the purgative varies. Saline mineral waters are excellent, and when it is inconvenient to seek relief in this manner I generally give the flower of sulphur, either alone, or to each ounce of it, adding a drachm of sesquicarbonate or biborate of soda, and sometimes from twenty to forty grains of ipecacuanha powder. One to two scruples of these powders, taken at night in a little milk, is generally sufficient to act mildly on the bowels, and such combinations are very valuable when a continued action is required. Notwithstanding the contrary prejudice, I have seldom found sulphur give any unpleasant smell to the skin. It is generally classed among purgative remedies because such is its visible action, but it owes its chief value, in diseases of cessation, to another action much more difficult to understand, and which has long rendered it so valuable both in hemorrhoidal affections, where there is an undue activity of the intestinal capillaries, and in skin diseases marked by a morbid activity of the cutaneous capillaries. Whether sulphur cures by acting on the nerves or on the blood-vessels, or by modifying the composition of the blood itself, is difficult to tell, but it does certainly cure the diseases enumerated. It forms part of many popular remedies for the infirmities of old age, and is lauded by Dr. Day in his work *On the Diseases of Old Age*. Kemp and Hufeland recommend the following powder to be given to those who are advanced in years, and who complain of a tendency to vertigo ; Guaiacum resin, cream of tartar, of each half a drachm, to be

taken at night. This, no doubt, will sometimes be found a useful laxative; so will the popular remedy called the Chelsea Pensioner, of which Dr. Paris has given the following formula: Of guaiacum resin, one drachm; of powdered rhubarb, two drachms; of cream of tartar and of flowers of sulphur, an ounce of each; one nutmeg finely powdered, and the whole made into an electuary with one pound of clarified honey; a large spoonful to be taken at night.

The indications of sickness are well understood—Ice, alkalies, tonics, opiates given internally, counter-stimulants to the pit of the stomach. If sickness, by its continuance, endangers life, the best remedy is an issue applied to the epigastrium, of which practice I have published a successful case in the *Obstetrical Transactions*.

symptoms are frequently increased ; and sometimes, without this being the case, a neuralgic affection of one or both mammary glands arises in the midst of a menstrual epoch, and continues for months, with exacerbations at each recurring catamenial epoch. The breast is uniformly swollen, without increase of heat, and the pain is great, and much increased by moving the arms. I have seen this singular affection in young women of the healthiest constitutions, and in whom it has resisted the long-continued application of various narcotic preparations. Landouzy found the left breast alone affected in four out of five cases.

Sometimes menstruation will originate a hard and painful swelling of some portion of the mammary gland, which may last for months and for years, being always worse during the menstrual process. I have now under my care a lady, aged twenty-four, suffering from chronic inflammation of the body of the womb, which has lasted for many years. Her father first consulted me in 1853, for hard swellings in both of her breasts. They had been thought cancerous, but I consider them to be an instance of induration of the glands, the result of morbid menstruation in an unhealthy subject. Each breast is a flaccid bag, in which the mammary gland can be felt as a hard, flat cake, with sharp edges, well detached from the ribs. The pains in the breasts are often so severe as to prevent sleep for a fortnight before menstruation, amending during the flow ; and as this state of things has now lasted nine years, it cannot be cancer.

A hard and painful swelling of a portion of the breast became apparent in the wife of an eminent surgeon. It was pronounced to be cancerous by several surgeons, but Sir C. Locock and Sir B. Brodie thought it benignant ; and this mammary tumour was the first indication that the menstrual function was going to be re-established after fifteen years' absence. The painful swelling then subsided, the lady became pregnant, and has had three children, although Simpson had previously given as his opinion, that she would never have a child, and would die in childbed should pregnancy occur.

The influence of the ovaria in the production of mammary tumours is a matter for investigation. In the case related by S. C. Houston—*American Jour. of Med. Science*, Aug.,

1834—it is fair to suppose that the enlargement of the ovary produced the hypertrophy of the breast. In this case the mammæ enlarged much more than usual at first menstruation, and became enormously hypertrophied in the following years of virgin life. On opening the body, the ovaria were found to be larger than usual, and apparently diseased; the uterus did not exceed the ordinary size in females of the same age.

I have twice seen distinct ecchymosis of the skin covering the breast, without being caused by external violence; and it is reasonable to admit that small hæmatic cysts of the breast are sometimes the result of the menstrual process. Menstruation had been irregular or suppressed in most of the cases seen by Velpeau.

CONNEXION.—The undeveloped nipple is a sign of virginity, and in some women the breasts are always made painful by connexion, and become larger.

PREGNANCY.—Its influence on the mammæ is well known, and has been ably demonstrated by Dr. Montgomery.

CESSATION.—I have noted mammary irritations and swelling in 14 out of 500 cases of cessation, but I think it is more frequent, and may help to induce the belief that pregnancy has taken place. In two of Dr. Kirby's cases of mammary irritation, the patients were fifty years of age. It is well known that, in general, the mammary glands become atrophied after the cessation of menstruation, although the breasts may appear voluminous from the deposition of fat in the surrounding cellular tissue. It would be well if the menstrual function were always noted by those who record cases of this description. Thus, out of four cases published by Dr. Kirby—*Dublin Medical Press*, Dec., 1852—this is omitted in three. Spontaneous ecchymosis sometimes marks the breasts at this period, and Dr. Semple has published a case, in which a bloody discharge from the nipples continued every month, for five years after cessation.

OVARIAN AND UTERINE DISEASE.—It will be seen that the painful swelling of the mammary glands is sometimes a symptom of ovaritis, of chronic ovarian tumours, and of all uterine affections, particularly when the body of the womb is affected. When impelled to action by diseases of the repro-

ductive system, the breasts frequently discharge mucus, and sometimes a milk-like fluid.

I shall relate a case of internal metritis, in which both the breasts, but particularly the left, have repeatedly appeared as if an abscess were forming, and a large amount of milky fluid passed from the nipples.

THERAPEUTICAL INDICATIONS.

1. The avoidance of pressure from ill-made stays.
2. The gentle anointing of the breasts with camphorated liniment, with or without belladonna.
3. The application of a cotton-wool poultice.
4. The insurance of healthy menstruation.

CHAPTER XII.

“ Non sunt contemnenda quasi parva,
sine quibus magna constare non pos-
sunt.”

INFLUENCE OF THE OVARIAN NISUS ON THE CUTANEOUS AND URINARY SURFACES.

THE lesser manifestations of any force are as deserving of notice as those which more strongly express its nature; and if the influence of the ovarian nismus on the skin is so slight as to pass unobserved at many stages of the function, at its cessation this influence becomes the paramount symptom. Much is known respecting the functions of the skin; but the composition of the fluids it exhales is so little ascertained, that a French physician, lately operating upon 28lbs. of perspiration, detected the existence of a peculiar acid, which he calls *hydrotic*, and affirmed that it passed through the skin in combination with soda and potash. Other chemists have found in it, butyric, acetic, and formic acids. The chemical differences of perspiration in health, and in the various forms of disease, have scarcely been investigated, although the research might solve pathological problems, and suggest therapeutical measures. At present nothing is known beyond the extreme importance of a free cutaneous exhalation, of its quantity being, to a certain extent, in inverse ratio to the urine, and of its partial or complete suppression being one of the most frequent causes of disease. The nose convinces one that the perspiration of women is more acid than that of the other sex, that the perspiration of the insane has a peculiar odour, and that when in the Turkish bath, the perspiration of those suffering from albuminuria is very offensive.

The ovarian nismus acts in three ways on the skin—1st, by increasing perspiration; 2nd, by producing discolorations of the skin; 3rd, by inducing cutaneous eruptions.

1. Even in young women, perspiration is sometimes increased when the menstrual flow is deranged or suppressed,

and it is also one of the most frequent symptoms of the change of life, for at this period,

The heats and flushes were noticed in	. 38 per cent.
Gentle perspirations in	30 „
Drenching sweats or ephidrosis in	16 „

These changes are so evidently the means employed by the ganglionic system to divert from the generative apparatus the blood periodically impelled to it by the ovarian nismus, that not only do they become distressing at the demise of the ovarian nismus, but during the physiological subsidence of its usual mode of action, during pregnancy, and during lactation. I have already alluded to the increase of animal heat during pregnancy and lactation, not only proved by heats and flushes, but by the inability to bear the usual amount of clothing. These flushes of heat are not unfrequently accompanied during pregnancy by perspirations. Frank relates the case of a lady, who, during the whole time of pregnancy, sweated so much on the left side, that it ran from her fingers, and often obliged her to renew the left sleeve of her dresses. During lactation the sweats are often as drenching as at cessation.

These symptoms, little dwelt upon by pathologists, derive great importance from their frequency, and also from the insight they afford into the means by which nature relieves the system of the fluids that are no longer every month discharged; for, when the periodical secretions from the uterine and the intestinal surfaces are checked, it seems as if the mass of fluids was often thrown on to the extensive surface of the skin, which is so frequently found to stand in antagonistic relation; hence arise the heats, flushes, and gentle perspirations, by which, in the generality of cases, further mischief is prevented. This is not surprising, since, long ago, Sanctorius established that, "Insensible perspiration alone discharges much more than all the sensible evacuations put together." It will be remarked, however, that in 16 per cent. the cutaneous exhalation, by its amount, became itself a disease, without relieving the patient so much as the more moderate exhalation; and this would not be understood were it not for the uncontradicted statements of the same observer: "That

perspiration which is beneficial, and most clears the body of superfluous matter, is not what goes off with sweat, but that insensible steam or vapour which, in winter, exhales to about the quantity of fifty ounces in the space of one day." "Sweat is always from some violent cause; and as such—as static experiments demonstrate—it hinders the insensible exhalation of the digested perspirable matter."

The drenching perspirations seldom last very long, but the heats, flushes, and gentle perspirations often appear several times a day for ten or sixteen years after the cessation of menstruation. These perspirations are not always general, and are in some confined to the upper part of the body. E. W. is now fifty. The menstrual flow has been very irregular and painful for the last eighteen months, and she has adopted flannel next her skin, on account of perspiration, limited to the pit of the stomach, being so abundant, that it saturates all the clothes covering that part of the body.

2. The influence of the ovarian nusus is shown in many women at each menstrual crisis, by the dark encircled eye, and by some alteration of the usual complexion. In those who are fair, the skin of the face becomes muddy or pale; in brunettes, it is often patched with red, yellow, and green; and where menstruation is irregular, it may be suffused with heats, flushes, and sometimes the cheeks assume a dull brick-dust hue. In chlorosis, the skin not only becomes blanched from capillary inactivity, but it often becomes yellow, or assumes a greenish hue.

All the cases of black discoloration of the face which have been recorded, Dr. Neligan states, occurred in young females affected with derangement, or partial or total suppression of the catamenia: in three—those most accurately reported—there was black vomiting; and in one at least, the black colour disappeared with the restoration of the uterine function. Dr. Neligan terms the disease *steorrhœa nigricans*; and considers that, as not uncommonly occurs in females in whom the menstrual function is deranged, the sebaceous secretion is augmented in quantity, and in some cases is stained with the colouring matter of the blood—this being analogous to black coloured vomiting, dark sputa, dark urine, or hemorrhagic subcutaneous extravasation. In the treatment, the

evident indication is to restore a healthy state to the uterine function.

During pregnancy, there is the well-known discoloration of the circle round the nipple. The face often becomes yellow, sometimes looking as if it had been badly painted with ochre, or it may be very much darkened; thus Pr. Simpson exhibited to the Medical Society of Edinburgh a woman whose face, soon after confinement, was as black as a negro's. Women of a swarthy complexion, when pregnant, have often a dark abdominal line extending from the pubis to the sternum, which fades away after parturition.

3. The influence of the menstrual function on the skin is shown by the repeated production of various cutaneous eruptions.

One of my patients is very much troubled with pruritus of the skin towards the end of the menstrual period; there is nothing visible, but the itching often prevents sleep, reminding me of the intense pruritus that sometimes accompanies pregnancy. In a case of this description, related by Dr. Maslieurat Lagemard, the pruritus began at the sixth month, resisted every treatment, and is said to have caused premature confinement in six out of eight successive pregnancies. Erythema, acne disseminata, eczema, and erysipelas of the labia have appeared successively at these times, and I have known an angry boil to arise at four successive monthly epochs.

E. T. and two other patients have been much troubled at menstrual periods with congestion of the nose, which feels "burning and aching," as it does sometimes previous to epistaxis. B. de Boismont has observed vesicles and pustules on the nose or chin as symptoms of the menstrual crisis. Bordeu mentions a case where the face was attacked with erysipelas at each menstrual period. I am now attending a lady, in whom the menstrual flow had been deficient for the last few months, and at each menstrual period, her ears and their vicinity became covered with eczema. This has ceased to occur since the menstrual function has been set right. The following case exemplifies the influence of the ovarian nusus on the skin:

CASE 30.—Oct. 1, 1851, I was consulted by Miss A. M.,

aged twenty-four, of middling stature, delicate looking, with brown hair and grey eyes. After twelve months' prodromata, consisting of frequent bleeding from the nose and violent pain at the pit of the stomach, she first menstruated at fifteen, and the flow *usually* took place every fourth week, and lasted four days. When it missed, there was great increase in the epigastric pain. She had been more regular for the last three years, but the flow was less abundant, and accompanied by more than usual pain, and by swelling of the breasts. About two years previous, three days after menstruating as usual, when kneeling before the fire, she felt a numbness in the left thigh and leg; convulsions followed, and she became unconscious. She recovered, but shortly after experienced a slighter attack of the same nature, and for the year following there was no epigastric pain, but it returned last Christmas, just before menstruation, and has lasted ever since. She calls it an anxious, distressing pain, and says that it is sometimes relieved by pressure. It makes her feel faint, and is accompanied by heats, flushes, and a sense of choking in the throat. There is flatulency, nausea, and sometimes sickness; but the tongue is clean, the bowels regular, and no bile is ejected by vomiting. For this strange affection, many persons had been consulted without benefit. I ordered the compound camphor mixture, aloes and myrrh pills, with carbonate of soda in water after meals, and an opium plaster to the pit of the stomach. The patient got better under this treatment, and was restored to health by the use of Bullock's syrup of citrate of iron and quinine; but so soon as the menstrual function was restored to order, and the general health improved, the nose and cheeks became covered with an abundant crop of pustules of *acne punctata*. These appeared first at a menstrual period, but remained for several months, always becoming worse at the menstrual epochs. I sent her to Mr. Startin, who cured the cutaneous eruption.

If cutaneous eruptions very seldom owe their origin to the menstrual function during the period of its full performance, they are of frequent occurrence during the prodroma of first menstruation, and until it is regularly established. Those who attend large girls' schools know how frequently *acne* and other skin diseases appear on the face, back, and shoulders

during that time, and how quickly they disappear when menstruation has become regular. Baron Alibert relates having observed some cutaneous eruptions to appear twice only in life—once before first menstruation, and once at its cessation, and I have twice seen these epochs preceded by an abundant eruption of boils.

CASE 31.—M. B., aged fifty, first menstruated between her eighteenth and nineteenth years with little previous disturbance, and continued regular until twenty years of age, when she married. She has had nine children, the last when forty-four years of age. At forty-eight she had several floodings, but without much increase of pains in the head. The catamenia ceased at forty-nine; this was followed by no disturbance of health, except by a severe attack of nettle-rash, three months after, on the chest and body, which disappeared on the proper medicines being administered; twice, however, it has occurred at irregular periods, and on the 28th of March she applied for relief, at the Farringdon Dispensary, for a fourth well-marked attack of the disease, on the lower part of the body and thighs. As this patient had never before had the slightest rash, and as this nettle-rash has appeared four times in the year which followed cessation, I may believe it to have been caused by this crisis, as in the case cited by Tissot, of erysipelas of the face occurring fifteen times during the two first years after cessation, less frequently during the two next years, and only once during the fifth year. These are, however, rare instances, and, generally speaking, cessation takes place without any cutaneous eruption.

THERAPEUTICAL INDICATIONS.

1. To relieve the irritability of the nervous system by the sedative preparations already recommended.
2. To relieve the vascular plethora resulting from the cessation of a periodical flow of blood, by taking from three to four ounces of blood from the arm at successive months.
3. To relieve the skin itself by tepid baths.
4. To direct to the kidneys the saline matters which are otherwise removed by perspiration.

CHAPTER XIII.

VESICAL SYMPTOMS AND URINARY DEPOSITS.

THE close proximity of the womb to the bladder sufficiently explains why the womb, by the morbid performance of its duties and by its various diseased conditions, often causes vesical symptoms; exactly as it still more frequently gives rise to a diseased condition of the rectum. There is sometimes a real transmission of inflammation from the womb to the bladder, and an habitually more frequent secretion of mucus, but generally the vesical distress is of a nervous nature, indicated by the frequent desire to micturate, although the bladder be almost empty, and by the tenesmic character of the pain, as well as by the frequent efficacy of simple means, such as hot fomentations or poultices, and anodynes applied above the pubis. These symptoms almost invariably disappear on the abatement of the uterine disease; sometimes, however, they persist, as in a singularly nervous lady, now under treatment. In this case, frequent desire to micturate, with exquisite pain on passing urine, has continued unabated for seven months. The patient was told by an eminent surgeon, that it was caused by uterine ulceration, but the vesical symptoms were not cured by uterine treatment. Other advice was likewise inefficacious. Beyond habitual congestion and dysmenorrhœa, there was nothing amiss with the womb; the urine, analysed by Dr. Beale, contained bladder epithelium and pus; its specific gravity was 1015, and 1000 grains contained 20 grains of urea, showing that the patient suffers from chronic cystitis. I gave sesquichloride of iron with tincture of hyoscyamus in an infusion of quassia—a combination most suitable to such cases—injections of acetate of lead and laudanum, a strong belladonna ointment to the pubic region, and subsequently I ordered eight leeches to be applied above the bladder. Under this treat-

ment the patient very much improved, but had she not done so, I should have applied a solution of nitrate of silver to the urethra and meatus urinarius.

It is scarcely necessary to observe, that distressing urinary symptoms may be caused by irritable tumours of the meatus.

I have repeatedly compared the morbid functions of the ganglionic system with its healthy function—fevers with menstruation. Nature gives its warrant to the comparison, for in both fever and menstruation the critical discharge is frequently met with in the urine. My attention was first drawn to the subject by a patient telling me “that she always knew when she was going to be *poorly*, by her urine being so very muddy;” and indeed many women state that their water is generally thick and muddy two or three days previous to menstruation. I have found the sediment to be generally composed of phosphates. Dr. Rigby has remarked that the urine of dysmenorrhœic patients frequently contains lithates, as it does also in cessation cases; but this inquiry could only be carried out in hospital practice, and is certainly worth doing, for who will not admit with Sir H. Holland, that although much light has been thrown on the functions of the kidneys, still the relation of the urine in its quantity and properties to the various changes occurring in other parts of the body still offers singular difficulties to the physiologist? The administration of alkalies, so useful an addition to the treatment of such cases, improves digestion, and by their action on the blood they doubtless neutralize some of its noxious elements. Their utility will be still further understood, if it be admitted, that notwithstanding the use of diuretics, the urine previous to, and at cessation, is often secreted in smaller quantity, and deposits abundantly. I often give liquor potassæ or the bicarbonate of soda, because it is a convenient form of administering it, and not unpalatable. After the first few days, I give it only once a day.

CHAPTER XIV.

If type be important in pathological,
is it less so in physiological phenomena?

ON TYPE IN MENSTRUATION.

THE observation of the type is as important in menstruation as in the pathology of intermittent fever, or any other disease. In making this assertion, I know that I lay myself open to the charge of presumption, in giving so much importance to what is considered of slight moment by physiologists, and by those who have even recently written upon diseases of women. Whether the menstrual crisis returns at the second, third, or fourth week, they consider it to be physiologically of little consequence, whereas I believe, that whenever menstruation occurs more frequently than once a month, it is the indication of morbid action either in the ovario-uterine organs or in the nervous system. The language of many nations implies that this function should recur every month, and it is well known that it does so in the majority of instances. Thus, if one refers to B. de Boismont's statistics, it will be found that out of a hundred women—

In 61, the menses occurred monthly;
,, 28, they occurred every three weeks;
,, 10, they occurred at variable periods; and
,, 1, a healthy woman of twenty-three years of age, they occurred regularly every fortnight.

On referring to my notes, I find that in twenty-three per cent. it did not follow the monthly type; in seventeen per cent. the type was three weeks; in five per cent. it was every six weeks; in one per cent. it occurred every fortnight. Having established these exceptional cases, I sought their explanation, and found that, in one-half of the three-weekly cases, the type was explained by ovario-uterine disease of an organic nature, or by chlorosis; and in more than one-half

of the six-weekly cases, the patient's health was habitually bad, owing, in two instances, to uterine disease, which was also the case with the one that assumed the fortnightly type. If it be argued that, in some women, menstruation assumes from the first the three-weekly type, I reply that this only proves that it is morbidly performed from the first, or it would retain the same type through life; whereas I have often found that in such women, after successive fluctuations of type, the menstrual function was performed once in every lunar month after marriage, parturition, or an improvement in the general health. Nature, animate or inanimate, is full of periodically recurring phenomena. The diurnal periodicity of our planetary system is felt by man, for he experiences, by insensible perspiration, a constant periodical loss, which was first discovered by Sanctorius, who established—"That even those who are in a perfect state of health, and observe the utmost moderation in living, once a month increase beyond their usual weight to the quantity of one or two pounds, and at the month's end return again to their usual standard in the same manner as women do; but then by a critical discharge of urine, it being either increased in its quantity, or more turbid."

From a patient investigation of the phenomena of menstruation, I am convinced that women are not free from the changes noticed in the male sex by Sanctorius. Previous to each menstrual flow there is generally an unusual deposit of saline substances in the urine; so that instead of viewing the menstrual function as altogether peculiar to women, it should, on the contrary, be regarded as the extension of a phenomenon common to both sexes. Thus, by an admirable simplification of means, that which serves in man to prevent disease or an extension beyond the normal size, is made subservient in women to generation; that is, to the extension of the human race in time and space. A further analogy between menstruation and the monthly oscillation in the urinary discharge of man, as observed by Sanctorius, is that, "before the aforesaid crisis happens, there is felt a heaviness in the head, and a lassitude all over the body, which symptoms are afterwards removed." These symptoms are analogous to some of those which precede menstruation.

REMITTENT MENSTRUATION.—I have given the name of *remittent* menstruation—a term borrowed from the pathology of fever—to that variety of menstrual derangement which is characterized by a change from the habitual type to another, where the menstrual periods are brought nearer, and tend to run into each other. Dr. Laycock has brought forward many facts to show that the periodical changes to which the reproductive function is subject in animals, are generally governed by seven and its multiples; and Stahl remarks, as menstruation is a crisis, it is not surprising to find it follow the septenary march adopted by other critical movements of the body.

In a work recently published, after relating that several patients did not suffer from menstruating every fortnight, Négrier says, “I do not believe that the ripening of the ovarian vesicles can take place in less than a month; so, in these cases, I think it more natural to suppose that the two ovaries might so progress monthly that, for instance, the right would contain a ripe vesicle on the 1st of the month, while in the left ovary a vesicle would ripen on the 15th.” But before admitting this explanation it must be shown that menstruation is caused by ovulation, which I do not believe.

When remittent menstruation cannot be explained by an organic cause, I consider it to depend upon some perversion of the nervous force presiding over the generative function, because those in whom this anomaly is observed, are generally of a delicate and nervous temperament, and because I have hitherto always succeeded in bringing back menstruation to the monthly type by the exhibition of quinine—a remedy which so frequently cuts short abnormal periodical manifestations, whether occurring in the circulating or in the nervous systems, in the shape of intermittent fevers or of the periodic pains of neuralgia.

If remittent menstruation be considered as a nervous affection of the ovario-uterine organs, and its pathology be inquired into, it will be found that its predisposing cause is the nervous temperament, and particularly that form of it described as the ovarian temperament. In very nervous women, the emotions attending courtship are sometimes sufficient to bring on remittent menstruation. Thus, women living in

large towns, in the midst of all the stimuli of civilization, are more subject to abnormal types of menstruation than those of the lower orders of society in the country, more particularly the peasantry. In this it is with menstruation as with disease, for Baglivi gives, as the result of his observations, that in the inhabitants of the country, the crisis occurs, exactly as it has been said to do, by ancient authors, and Stahl has made the same observation. In those who menstruate during lactation, the menstrual function, which had previously followed the monthly type, often occurs every two or three weeks. Inflammation of the neck of the womb and sub-acute ovaritis are evident causes of remittent menstruation. I have seen menstruation become remittent from the too frequent application of nitrate of silver to the neck of the womb, but a much more common cause of it will be found in the domestic abuse of purgative medicines; this can be explained by the solidarity of action by which the nutritive and generative intestines are connected; and if disturbances of the menstrual function are so frequent, it is because women have not been taught the mischief they bring upon themselves, by treating a natural function as a child does a watch—setting the hands backwards and forwards. Haller and Burdack have asserted, that too frequent menstruation was a sign of an ardent temperament; but I believe the assertion to have no foundation. When remittent menstruation is permitted to continue in girls of a delicate frame, there are no means of strengthening their constitutions; the body never attains its proper proportions; increase of age brings with it no increase of strength, and during pregnancy there is a tendency to abortion. This continual drain, by supplying the organs with an inefficient amount of deteriorated blood, may help to produce many diseases of vitiated nutrition, particularly consumption.

This assertion has been confirmed by Dr. Burslem, who has shown that disorders of menstruation are not only symptomatic of tubercular consumption, but may also be its determining cause. Thus, out of 118 consumptive patients, of which Dr. Burslem gives those details which relate to the menstrual function, menstruation was remittent in 22 in-

stances. In 18 out of these 22 cases, menstruation adopted a three-weekly type, and a fortnightly type in 4. In 61 out of the 118 patients, the menstrual discharge was profuse in the earliest stage of the disease, and in 68 leucorrhœa was complained of. In several other young women the menstrual discharge was altered in its appearance, being either serous or like green water, and offensive. It is well known that, when once consumption is confirmed, the menstrual flow is entirely suppressed. Even if remittent menstruation occur in constitutions adverse to the development of tubercles, the patient often becomes particularly amenable to nervous affections. G. D., thirty-six years of age, had a first hysterical attack seven years ago, on seeing a child fall from a window; ever since, menstruation has occurred every fortnight. She remains very nervous and hysterical. J. O. B. is twenty-seven; for the last six years, the menstrual flow has taken place every fourteen days, so that she is only free from it ten days; constitutionally nervous, she has since then become more and more so, and now she is in a state of mental derangement.

THERAPEUTICAL INDICATIONS OF REMITTENT MENSTRUATION.

1st. To ascertain by careful examination whether the anomaly is caused by ovarian disease or by inflammation of the neck of the womb, because local treatment will then be required, in addition to constitutional measures.

2nd. To give quinine. I was led by the analogy existing between the menstrual function and intermittent fever, to give bark in the abnormal types of the menstrual function, and I have never found it fail, except in those cases where the perversion of type was caused by severe inflammation of the neck of the womb. I have given the sulphate alone, in doses of from two to three grains every other night, or every night, on the subsidence of menstruation; or I frequently combine that dose of sulphate of quinine in a pill, with two grains of extract of hyoscyamus, or a quarter of a grain of extract of opium, when nervous symptoms predominate; or with three grains of sulphate of iron when the patient is anæmic; or with extract of aloes when it is necessary to prevent constipation.

The following case will show the efficacy of quinine in remittent menstruation:—

CASE 32.—L. S. was admitted at the Paddington Dispensary for Diseases of Women in February, 1852. She is tall, thin, with blue eyes, auburn hair, and a freckled skin. She is a painter's wife, and has always lived in London, and in easy circumstances. After considerable pseudo-narcotism, continuing for nine months, she first menstruated between fourteen and fifteen, and continued regular, the flow occurring every fourth week for three days. She married at seventeen, and never conceived, but continued regular and in good health, until five years ago, when her husband gave her a venereal complaint, characterized by pimples, sores, and a painful discharge. She was treated for this in a London hospital, but left before she was cured; she subsequently suffered from cutaneous eruptions, and her right leg ulcerated below the knee, where there is still an ulcer about the size of a crown piece. For the last five years she has always been more or less subject to the whites, and menstruation recurs every fourteen days, with headache and great abdominal pain. She is much emaciated, reduced to great debility, the tongue is foul, there is epigastric pain, and frequent eructations.

I ordered two grains of blue pill, with three of extract of rhubarb, every night, and the compound camphorated mixture. Feb. 9.—On examination, the neck of the womb was found painful to lateral pressure of the finger, but there was no other sign of uterine disease—none of ovarian. The patient being better, I ordered the following pills:

Sulphate of quinine	.	.	.	gr. xii.
Extract of opium	.	.	.	gr. ii.

to make four pills, and take one every night, with the mixture.

Feb. 16.—After an interval of twelve days menstruation returned with the usual sufferings, and intense epigastric pain.

I advised, as a pill to be taken at night,

Extract of opium	.	.	.	gr. i.
„ aloes	.	.	.	gr. iii.

A tablespoonful of the mixture immediately before meals,

and half a tablespoonful of carbonate of soda in a wine-glass of water after meals. Feb. 19.—The pains were assuaged. In addition to the other treatment, I ordered an opium plaster to the pit of the stomach. Feb. 23.—Better. I returned to the sulphate of quinine pills.

March 8.—The patient was better in every respect, except in the persistence of leucorrhœa. The period has passed over at which the menstrual flow has shown itself for the last five years, without making its appearance. The pills and mixture were continued. March 15.—Improvement continued. The mixture was repeated, and two myrrh and aloes pills ordered to be taken at night.

The menstrual flow came the following morning, a month after its last appearance, and with less pain than the patient had ever experienced. She is stronger and stouter, but leucorrhœa is abundant. Alum injections were ordered, the sulphate of quinine pills were omitted. I saw this patient in January, 1853, and menstruation had ever since kept to the monthly type.

This case seems worthy of attention. The debilitating performance of menstruation, which was not caused by any organic uterine disease, had lasted five years, and was modified by six weeks' treatment. The complaint was of a nervous nature, and was cured by thirty-six grains of sulphate of quinine. During the five years the patient had been under various medical men, but had never drawn their attention to the undue frequency of menstruation. It would be useless to relate other exemplifications of the utility of quinine, as they may be found in the columns of the *Lancet*.*

The same plan of proceeding is also valuable to the practitioner, as a means of facilitating the treatment of chronic uterine disease.

In several cases where the treatment was indefinitely prolonged by the return of menstruation every two or three weeks, the quinine has delayed it to the full month, even when the neck of the womb had been subjected to the irritation of potassa fusa.

In stating that I have never seen quinine fail in restoring

* Cases showing the Utility of Sulphate of Quinine. *Lancet*, 1851, Vol. I.

menstruation to its normal type, I do not mean that the type always continues normal, for in several cases where the ovarian temperament was strongly marked, I have known menstruation return to the three-weekly type on ceasing the exhibition of bark. Since making these therapeutical essays I have met with two authors who have used quinine in diseases of menstruation. Fothergill has done so when menorrhagia coincided with intermittent fever, and he observes: "It has happened that a regular intermittent has been attended by an immoderate flux. In seasons when autumnal intermittents are frequent, such circumstances will now and then happen to patients who have suffered considerable loss about the time of cessation. In such cases bark safely cures both the flux and the intermittent."

Dr. Kennedy mentions as a cure for the fortnightly menstruation, to forestall its appearance by the application of leeches a day or two before its occurrence; but I prefer my own plan, and as a means of preventing remittent menstruation, I advise,

1. The strengthening of the nervous system by the rules laid down in my work on Female Hygiene.
2. The improvement of the blood by tonics and steel.
3. The observance of a judicious regimen during the menstrual crisis.
4. The forbidding the domestic use of purgative medicines, which frequently disturb the regularity of the menstrual type.
5. In general marriage brings about the adoption of the normal type of menstruation, and parturition has often the same effect.

Thus have I passed, in rapid review, the many evidences of that species of fermentation admitted to exist at the menstrual periods, by Bayle and Etmuller, by De Graaf and Van Helmont, of the peculiar commotion of the blood which Democritus had in view when he talked of a "fervor uterinus," and I have shown that the menstrual flow, far from being a passive discharge, to be accounted for by mechanical causes, must be more than ever considered a critical termination, often preceded by mucous discharges

from the generative and intestinal canals, and determined by the complicated nervous phenomena which originate in the ganglionic nervous system. No one has hitherto attempted to follow out each of the manifestations of the ovarian nismus, in all the various phases of a healthy or a morbid action of the reproductive organs; and I hope that this careful sorting and classification of the effects of these organs on the system, and the philosophical deductions to which they have naturally led, may somewhat help to raise the standard of obstetric literature to a level of that of many other branches of medical science, and also contribute to the elucidation of many obscure forms of disease, for without this accurate study of menstruation it would have been useless to have attempted the investigation of uterine and ovarian inflammation.

PART II.

ON INFLAMMATION OF THE WOMB.

CHAPTER XV.

ON INFLAMMATION OF THE NECK OF THE WOMB.

"If ulceration of the womb occur after miscarriage, or from any other cause, all the circumstances of the patient's constitution should be taken into consideration, so as to determine whether it be right to influence the whole system, or only the womb itself."—HIPPOCRATES, *On Diseases of Women*.

"Abernethy's work, *On the Constitutional Origin of Local Diseases*, sheds a new light upon numerous diseases previously ill understood, but I cannot persuade myself that it did not, at the same time, have the effect of dividing attention too much from the opposite of his position, from the consequences of insidious local irritation upon the general constitution. Proceeding with little short of enthusiasm upon the newly-established principle, men began to discover a purely constitutional origin for all local disorders; they forgot, or at least slighted, the secondary effects produced on the system by the continuance of local irritation, and regulated their practice accordingly."—ADDISON, *On the Disorders of Females connected with Uterine Irritation*.

THESE quotations from the father of medicine, and from the lamented pathologist of Guy's Hospital, will show the spirit in which I wish to conduct this inquiry into the pathology of the womb; and it would be unintentionally, should I diverge from the precepts inculcated by these illustrious men.

It was doubtless an error to deduce all pathology from inflammation; but in practice, inflammation is the main pathological condition ever present to the medical mind, as a reality to contend with, or an eventuality to guard against. Having to treat a case, we almost instinctively ask ourselves, Is the disease inflammatory or not? Is inflammation the sole element, or merely a complicating circumstance of the morbid problem? If inflammation, of what kind and type, and at what stage of its career? We do this because we know the

frequency of inflammation; that if acute, it may speedily prove fatal, or undermine the constitution; while if chronic, we are better able to check its progress than that of many other morbid conditions. This applies altogether to the pathology of the ovario-uterine organs. In non-parturient women, *acute* inflammation seldom terminates fatally, though *chronic* very frequently renders life a burden, by the numerous morbid states which it often develops—such as diseases of menstruation, ulceration, and other morbid conditions of the uterine mucous membrane, hypertrophy, and displacements of the womb, various forms of neuralgia, and sterility.

I assume it granted that most of the diseased conditions of organs lined by mucous membranes, originate in the inflammation of these mucous surfaces, which remove from the system what would be prejudicial to its welfare, and are also susceptible of being more or less injured by external influences. I therefore believe that any further unravelling of the secrets of uterine pathology must be sought in the study of the diseased conditions of the mucous membranes lining the womb. I also admit that the body and the neck of the womb have each its pathology, although the inflammation of one part, is much oftener communicated to the other, than is usually supposed.

INFLAMMATION OF THE NECK OF THE WOMB.

Brought up in the same illustrious school of medicine as my friend Dr. H. Bennet, and professing the same views, it would be useless for me to treat *ex-professo* of diseases of the neck of the womb, as I should have to put in other words much of what he has written on the subject in his fourth edition; so after briefly studying inflammation of the lining membrane of the neck of the womb, I shall only touch on certain points on which I differ from him, or have something to add to his statements. I will conclude these preliminary remarks by expressing my dissent from Dr. H. Bennet's statement, that the neck of the womb, in the natural state, may be called a *highly vitalized organ*, for one might as well say that tendons are highly vitalized on account of the pain caused by their being overstrained. This statement is in opposition with that of former observers and with those of

the present time. De Graaf says "that the neck of the womb is harder and whiter than its body;" Røederer, "that the neck of the womb is hard and white, while its body is grey, and of a softer texture." I agree with these accurate observers, with Lisfranc, Dr. Forget, &c., believing that the neck of the womb is far from being composed of highly vitalized tissues, for when the whole organ is successfully injected, the body of the womb is found pink with the colour injected, while a section of the neck shows, by its remaining white, with how few vessels it is injected in the ordinary state; but this lowly vitalized structure is covered over by an erectile tissue, the continuation of that which lines the vagina. The impunity with which the neck of the womb bears surgical interference, sufficiently shows that it is not a highly vitalized organ; another proof will be found in some experiments of Dr. Duchesne, who has made many interesting applications of electricity to physiology and therapeutics. Dr. Duchesne's electrical apparatus is equal in power to 100 piles of Bunsen; and on directing the amount of electricity thus generated to the neck of the unimpregnated womb, no feeling was determined and no pain. There was a similar absence of sensation when the electrical current was directed to the bladder, but its contractibility was excited. Such is the structure and sensibility of the womb at intermenstrual periods; and the increase of size, and the softened texture of the body and neck of the womb, occurring at menstruation, are to be attributed to their becoming congested, owing to the healthy stimulus they receive from the ovary.

CERVICAL CATARRH.

Inflammation of the lining membrane of the neck of the womb is the most frequent uterine disease. It is often cured by nature, though often interminable, as inflammation is known to be when it takes possession of a mucous membrane. From this parent stock come the different kinds of ulceration which appear around the os uteri; for generally it is a misnomer to talk of ulceration dipping into the neck of the womb, and it would be more correct to speak of it as cropping out of the cervical canal. The slight ulcerations which are often found round the os uteri, are, in themselves,

insignificant, as harmless as a furred tongue. True, but the furred tongue portrays the foul stomach, and the fiery line of disease encircling the virgin os uteri, shows that the lining membrane of the neck of the womb is similarly affected—a condition which can often be made clear to the eye, when the os uteri is patulous. Inflammation of the lining membrane of the neck of the womb is often the chief cause both of its hard engorgement or hypertrophy, or of that softening of all its tissues which slightly resembles cancer.

Inflammation of the mucous lining membrane of the neck of the womb may be *acute* or *chronic*. In the *acute* form, pus, alone or mixed with mucus or blood, may be seen to ooze out of the os uteri, and if it be susceptible of being dilated by the valves of a bivalvular speculum, the mucous membrane may be found very red or ulcerated. This has been generally called *uterine catarrh* by French authorities, and in seven cases of this description, Becquerel tried the effects of uterine injections. As I shall hereafter mention, most English pathologists consider the muco-purulent discharge to come from the body of the womb as well as from its neck. Believing this to be an error, I suggest that the term *catarrh* should be reserved for cases of inflammation of the lining membrane of the neck of the womb in which it is but little swollen, attended by a small amount of heat, and by a discharge, oftener mucous or sanious than purulent; or, in other words, *catarrh* is a subacute inflammation.

The subacute or chronic inflammation of the lining membrane of the neck of the womb, is well worth attention, on account of its frequency, an assertion corroborated by many authorities, as well as by Melier, who was one of the first to notice it in the *Mémoires de l'Académie de Médecine*. Burns and Jewell have recognised it as a *subacute affection of the cervix uteri*. Lisfranc and F. Churchill have called it *acute uterine leucorrhœa*. Its long duration and tendency to relapse, and to cause erosion, or ulceration of the os uteri, renders it still more deserving of attention.

Its principal causes are—imprudences committed during the menstrual epochs; the excitements of a prurient imagination, which too often lead to masturbation; the too frequent practice of matrimonial rites; miscarriages, confinements, and

even the distension of the cervical canal by semi-organized blood clots, and by decidual membranes passed during menstruation.

The usual uterine symptoms are present in absence of all visible lesions. A digital examination is sometimes painful to the os uteri; at other times not. The same holds good with the application of the speculum, or with matrimonial intercourse; but pressure applied *laterally to the neck of the womb* gives more or less pain, which is not the case in the healthy state. A glutinous discharge is seen oozing out of a somewhat turgid os uteri, and long threads of it may be removed; but when uncomplicated by erosions, ulcerations, or vaginitis, I have not observed the discharge to be frequently abundant. Sometimes the discharge is of a brown colour, as in the cases related; not mucus streaked with blood—not the sero-sanguinolent discharges of the body of the womb, but an intimate mixture of mucus and blood, as in the rusty sputa of pneumonia. This discharge is very characteristic of subacute inflammation of the mucous lining of the neck of the womb; and on a microscopical examination, it is found to contain globules of blood more or less diffused, and mixed with mucus and epithelial scales. It is very annoying to women, from the manner in which it stains their linen. This discharge may last the whole intermenstrual period, or only during the ten days which follow the flow; and I have found iodine applications of great utility in such cases. Judging from my own practice, I believe that the *viscous* discharge is more frequently met with than the *brown*, which generally accompanies a more persistent type of inflammation. The lining membrane of the neck of the womb, like all other mucous membranes, may be the seat of chronic inflammation for years, without entailing more serious lesions than were at first visible, and, in general, the mucous membrane lining the neck of the womb may remain subacutely inflamed, without causing anything like *uterine softening*, but it fosters hysterical phenomena, keeps up a vaginal discharge, and causes repeated relapses of erosions, or ulcerations of the neck of the womb, of the too abundant secretion of its alkaline products, and by their presence on the os uteri, accustomed to acid secretions, they cause the rapid shedding of the

epithelium, with that destruction of the subjacent villi which warrants the name of erosion, exulceration, or ulceration. Whatever form it assume, all observers agree, that subacute inflammation of the mucous lining of the neck of the womb is a frequent cause of sterility.

So much has been said about ulceration, that many practitioners infer the absence of uterine disease from the absence of uterine ulceration; but, the uterine, like all other mucous membranes, may be in a very unhealthy state, it may be of a livid or dusky hue, dry and hot, without the slightest erosion, and may require to be deeply modified by substitutive agents, like iodine or nitrate of silver, to restore it to health.

In cases of uterine catarrh, I prefer the tincture of iodine, or the iodide of iron, because it enables me to effect a solid cure, without inducing much pain, or running the chance of the serious accidents which sometimes follow caustic applications. After clearing away the uterine mucus, I apply the tincture of iodine with a *sable* paint-brush, introducing it as far as I can into the neck of the womb, without using much force. On withdrawing the brush, I paint the vaginal portion of the neck of the womb. This is a mode of practice I have used for several years, and I can safely recommend it, and I find that something similar has been adopted by Dr. F. Churchill. A drachm of acetate of lead, in a pint of decoction of poppy-heads, forms the best injection in such cases.

A solution of nitrate of silver, forty grains to the ounce of distilled water, may be used to paint the womb in the same way, or the solid nitrate of silver might be employed. Some cases are so obstinate, that they require the use of the acid nitrate of mercury. Dr. Melier advised the injection of emollient fluids into the cavity of the neck of the womb, but they would be ineffectual to modify the inflammation of the mucous membrane, while their entrance into the cavity of the body of the healthy uterus might be attended by danger. If emollient injections into the undilated neck of the womb are objectionable, how much more so must be injections of a solution of nitrate of silver, as used by some French practitioners? Although the cavities of the healthy body and neck of the womb are separated by a stricture sufficiently small to prevent the easy passage of the uterine sound, nothing proves

that this stricture could prevent the passage of fluid, and the numerous and fearful accidents which have attended the practice of uterine injections, permit the belief, that stimulating fluids sometimes cause fatal metro-peritonitis, by passing into the healthy fundus uteri, and, perhaps, into the peritoneum through the oviducts. With respect to constitutional measures, I shall merely say, that in all chronic uterine affections the practitioner will find a sheet-anchor in the various preparations of iron, and that the syrup of citrate of quinine and iron, the syrup of iodide of iron, or that of hypophosphite of soda and quinine, are very good preparations.

BLENNORRHAGIC CATARRH OF THE WOMB.

This uncommon and little known disease, originates in blennorrhagic ulceration of the os uteri, which is not the result of previous blennorrhagic vaginitis, and is confounded with chancre, but it has a much paler aspect. Blennorrhagic ulceration almost inevitably gives blennorrhagia, and may be followed by blennorrhagic ophthalmia and arthritis, but not by syphilitic accidents, such as roseola, mucous tubercles, &c. When blennorrhagic ulceration becomes chronic, it looks like a benignant ulcer; it may heal of itself or by caustic treatment; and though, after accurate examination, the patient may be pronounced quite cured, yet she may again and again infect those who may have connexion with her. Dr. Bernutz has mentioned to me the case of a young woman, who owned that she had at seven different times, and at three weeks' interval, made this kind of fatal experiment upon medical students, in order to ascertain whether it was necessary for her still to continue under treatment.

In such cases, the external genitals, the urethra, vagina, and neck of the womb, are of a pale rose colour, and a slight opal tint of the drop of mucus at the orifice of the womb is the only suspicious circumstance; so that, without the patient's avowal, there is scarcely a possibility of certifying disease, so as to prevent its contaminating others. These facts show that, like other affections of mucous membranes, blennorrhagic catarrh of the womb may last a long time, and this specific inflammation is not limited to the neck of the womb, but infects also the lining membrane of its body and of the

oviducts, causing blennorrhagic ovaritis and pelvi-peritonitis more frequently than is generally supposed. It is well to draw the attention of observers, in this country, to this inquiry, as few are more important.

ULCERATION OF THE NECK OF THE WOMB.

Classing uterine ulcerations according to their degrees of frequency, I divide them into—I. Simple. II. Varicose. III. Fungous. IV. Cancerous. V. Syphilitic. VI. Pseudo-membranous.

It would be easy to establish as many kinds of ulcers as there are modifications of the blood ; but I do not think such distinctions would be founded on fact. I am obliged to admit the scrofulous ulcer of the womb on the testimony of others, but I have never seen one, although I have often seen ulceration of the womb in scrofulous subjects.

SIMPLE ULCER.

To limit the term ulceration of the womb to such cases only where there is a cavity a quarter of an inch deep, is not the received mode of describing ulceration of other mucous membranes or of the skin. A distinctly defined, red, and pus-secreting spot will be called ulceration to the end of time, by those who are not given to hair-splitting. The simple ulcer is generally the result of more extensive denudation of the uterine villi, so that several exulcerations or erosions of the mucous membranes unite into one. French pathologists consider simple ulcer of the neck of the womb to arise in acne, in herpes and psoriasis, which they seem to meet with frequently ; but I am bound to say, that I have very seldom met with such eruptions on the neck of the womb, and Lever has only noticed three cases of miliary disease of the os uteri, out of 483 cases of organic disease of the womb. It would seem that characteristic eruptions should be found both on the neck of the womb, and likewise on the skin ; whereas, in patients having, at the same time, skin and uterine diseases, the same eruption is not reproduced. In a lady who has been suffering for years from acne rosacea, often disfiguring the whole face, and from chronic uterine disease, the mucous

membrane is congested, and sometimes slightly ulcerated, but there is nothing to be seen like acne. Another lady has been more or less subject to psoriasis all her life, and for the last few years to uterine disease. The mucous membrane is sometimes much inflamed, and sometimes there is simple ulcer round the os uteri. Another patient has suffered for many years both from pseudo-membranous ulceration of the tongue and from uterine disease. There is sometimes a slight ulceration of the neck of the womb, but it is never covered by a false membrane.

VARICOSE ULCERS OF THE NECK OF THE WOMB.

Varicose ulcer, in the unimpregnated, differs from the varicose ulcer of the pregnant. In the unimpregnated there is a more or less extensive and very red ulcer on one or both lips of the womb; enlarged capillaries surround the ulcer, which bleeds on the slightest touch, and freely, if nitrate of silver be applied to its surface, whereas loss of blood is restrained by acid caustics.

Dr. H. Bennet first pointed out that, in pregnant women the os uteri may be externally surrounded by a red, mammillated ulcer, bleeding freely on the slightest touch, secreting pus, weakening the patient, and compromising pregnancy by sanguino-purulent discharges. I have found it safe to treat such cases by the application of the acid nitrate of mercury, and I feel confident that I have thus promoted the patient's safe delivery at the full time; but I consider such cases exceptional, and that they are the exaggeration of a physiological condition, requiring no treatment except astringent injections. The knowledge of this condition led Caseaux to make the somewhat paradoxical assertion, that "ulceration of the neck of the womb was the normal state in pregnancy." The *Société de Chirurgie* of Paris named a committee to inquire into this subject, and they found this red, mammillated state of the os uteri in every one of the pregnant women who were examined at l'Hôpital de l'Ourcine.

PSEUDO-MEMBRANOUS ULCERATIONS OF THE NECK OF THE WOMB.

Prof. Forget, of Strasburg, writing on diphtheria, observes

that the blistered surface of the skin often becomes covered with a thick membrane, most difficult to remove, and that he has several times seen the same kind of membrane form on the surface of an ulcer of the womb, after nitrate of silver had been applied to it, but that this circumstance was only inconvenient by interfering with treatment. This does not accord with my experience, nor with that of Dr. Bennet, nor of Dr. Ellis, who has lately written on the subject, nor with that of numerous French authorities. The difficulty of curing pseudo-membranous ulceration, rather than its frequency, induces me to dwell on the subject for I have not seen more than seven or eight cases, nor Dr. H. Bennet more than two or three, every year for the last ten years. It is utterly impossible to understand the subject without reference to well-executed drawings of the various kinds of false membranes that may cover uterine ulcers; and I am indebted to the kindness of my friends Drs. Bernutz and Goupil for the accompanying illustrations which are destined to adorn the third volume of their work on Diseases of Women.

Various ulcerations of the neck of the womb, more particularly of the gravid womb, are sometimes covered with pul-taceous concretions, like those that form on varicose ulcerations of the legs; but this substance soon falls, and is not reproduced.

When the neck of the womb is the seat of herpes, as represented in figure 1, after the bursting of the vesicles, their membranes remain as white concretions, which, however, soon fall, leaving an ulceration. Some chancres, called diphtheritic by Dr. Bernutz, as seen in figure 2, are more or less covered with a croupy-looking false membrane; but this soon falls, disclosing a healthy-looking ulcer. The preceding kinds of pseudo-membranous ulcers are of slight import; but there are two other kinds to be noticed, in which the concretion is, as it were, the badge of intractability.

The figure 3 represents what Dr. Bernutz considers to be a psoriasis of the neck of the womb, on which there are milky white patches entirely formed of epithelium. In one of Dr. Bernutz's cases, this coincided with psoriasis of the skin in a scrofulous subject; and although the neck of the womb had been cauterized with the actual cautery, this did

not prevent the re-appearance of this singular membrane. I have never met with such cases, but they have been called *Diphtherite du col*, by Boys de Loury and by Costilhes, a bad name, as there is nothing diphtheritical in the false membranes. The cases that I have seen resembled figure 4, which represents the ulcero-membranous neck of the womb. This form of disease exactly resembles the ulcero-membranous stomatitis of children and of soldiers, which has been so well described—the first by Rilliet and Barthez, and the second by Bergeron. This would seem to imply that the ulcero-membranous neck of the womb is a result of a cachectic disease of the system. Dr. Bernutz adopts this view, and mentions a case in which it coincided with an exactly similar state of the velum palati and of the gums. There was nothing cachectic in the constitution of the patients in whom I have observed this form of disease. Its peculiarities, its intractability, and its best mode of treatment will be exemplified by the following case :

CASE 33.—The widow of a clergyman, aged thirty-six, is in good condition, and looks healthy. After her first confinement, eleven years ago, there was ulceration of the neck of the womb, which was cured ; but there was a return of it two years afterwards, on her being again confined. About three years ago she was attended by Dr. Bennet, who soon recognised the pseudo-membranous peculiarity of the ulcer, by the fact that it was made worse by the application of nitrate of silver. As the cure did not progress rapidly, she consulted a surgeon, who advised leeches to the neck of the womb. Becoming worse, she returned to Dr. Bennet, who found that each leech-bite had been converted into a pseudo-membranous ulcer. He tried various caustics ; relieved the patient of the irritable, irksome abdominal sensation by which the complaint was attended, but had not prevented its relapsing. On the failure of his health, the patient came under my care. What I found to do most good, during the few days that she occasionally came under treatment, was the application of potassa fusa c. calce, dressing the sore afterwards with tincture of iodine. Once, after leading a very quiet life, the ulcer was quite linear ; while nursing a dying friend, it became much larger and crept on to the vagina. I

then applied freely the acid nitrate of mercury, which evidently did good, although the ulcers were not quite healed when the patient left town. When I again saw the lady in conjunction with Dr. H. Bennet, in August, 1861, there was still one small spot of ulceration with the usual false membrane, and we then made up our minds to use no local measures, and to give half a grain of blue-pill three times a day; being guided in this by the recent practice of French practitioners in such cases, and not by any circumstance that could in the least warrant the belief in a syphilitic character of the disease. After this treatment had been continued eight days, the ulcer healed, almost too soon to ascribe the result to the small quantity of mercury exhibited. The mercury was continued for six weeks without causing salivation, and the patient left town seemingly cured; but on returning a few weeks afterwards, there was another patch of false membrane on one of the uterine lips, which patch disappeared after several dressings with tincture of iodine; and when she left me in October, there was only a red stain in the place of the false membrane; and as she did not suffer at all from the pains and abdominal distress which used to attend the ulcer, there was fair ground for hoping the disease was cured; but on examining the patient in March, 1862, I found at the upper part of the vagina an irregular-shaped excoriation about the size of a shilling and patch of false membrane on one spot, and this had caused disturbance in the action of the bladder. Although not cured, the disease does not much interfere with the patient's enjoyment of life.

SYPHILITIC ULCERATIONS.

"There is a great deal of syphilis in the common run of uterine cases," is an occasional remark, but I can find no ground for this assertion, either in the records of what I observed in a large City dispensary or in the range of an extensive practice in the upper and middling classes of society. My conviction is strengthened by the fact of its being entertained by men like Drs. Bernutz and Goupil, who have lately studied the whole subject in the hospital especially set apart, in Paris, for the treatment of women who suffer from syphilitic diseases and are not prostitutes. In answer to my

question on this point, Dr. Bernutz said that syphilitic diseases of the womb are very rarely met with in ordinary practice, and that of all the syphilitic diseases of the neck of the womb, the true Hunterian chancre is the most frequently met with; and as in nineteen cases out of twenty, chancre on the neck of the womb is accompanied by chancre on the external organs of generation, the diagnosis is singularly simplified. Secondary affections of the womb are much less frequently observed—I mean mucous tubercles similar to those better known to appear on the velum palati, roseola, and a papulo-squamous eruption similar to what appears on the skin. Tertiary symptoms are even still more uncommon on the neck of the womb. What has deceived many pathologists is, that women suffering from syphilis are often affected with uterine diseases which are not at all syphilitic.

It must not be forgotten that women who contract syphilis, usually lead a life, in which misery and debauchery succeed each other in turns; that, besides its poisoning influence, syphilis brings on a cachectic condition of the fluids; that mercury and the exigencies of a prolonged treatment are powerful debilitating agencies; and thus one can easily understand that syphilitic women, more frequently than others, suffer from uterine catarrh, which is not at all syphilitic, and from ulceration of the os uteri, which is no more syphilitic than the soreness of the nostrils caused by coryza.

PROGNOSIS IN DISEASE OF THE NECK OF THE WOMB.

Whenever there is a large amount of mischief in the neck of the womb, the result of uterine disease having been misunderstood and neglected for years, or when there is frequently a sanguinolent discharge, much sickness, and difficulty of walking, it is ten to one that diseased action has spread from the neck to the body of the womb, and care should be taken not to promise a speedy recovery. One may state, that if disease be limited to the neck of the womb, it can be cured in about such or such a time; that in all probability the body is likewise affected, and that its inflammatory state may for long prevent the patient's perfect recovery, even when the neck of the womb has been brought to a healthy condition.

CHAPTER XVI.

INFLAMMATION OF THE BODY OF THE WOMB.

WHEN I started in practice, twenty-five years since, I firmly believed in the infallibility of nitrate of silver, and thought that with one caustic or another one could cure all diseases of the womb ; but I soon found out my mistake ; for after having cured patients of all tangible disease of the neck of the womb, some would continue to suffer as much, or almost as much, as before. The truth is, that above the internal sphincter, there is the body of the womb with its lining membrane, which for thirty years is thrown into a state of hemorrhagic orgasm every month for several days.

In the unseen, all-important phenomena which then take place in the lining membrane of the womb, and also during pregnancy, the parturition of a premature or an imperfect ovum, and during the puerperal state, most diseases of the womb have their origin ; confirming the position already assumed, that almost all diseases of the womb have their type and origin in diseases of menstruation. On passing from the study of disease of the neck to that of disease of the body of the womb, it is obvious that we exchange the visible for the invisible, the distinctly tangible for the obscurely felt ; the result is, that the assertions of one talented observer are soon contradicted by another. Chomel gives an elaborate description of acute inflammation of the substance of the body of the womb, but Caseaux and Bernutz say they have never met with such a disease, although pus has been found in the walls of the unimpregnated womb ; and the latter states, that Chomel has described as acute inflammation cases in which the womb is painfully distended by the menstrual fluid being for a time retained. It is easy to make anything square with preconceived notions, but I should be sorry to be called upon to distinguish inflammation of the substance

of the womb from its active congestion and simple hypertrophy; for, unless amply verified by post-mortem examinations, even clinical observation is useless. My present object is to discuss the different inflammatory affections of the lining membrane of the body of the womb, premising that it generally brings on chronic inflammation of its substance or its active congestion; and that I have never seen a case in which an inflammatory swelling of the body of the womb was unaccompanied by internal metritis.

INTERNAL METRITIS.

The pathology of internal metritis is yet to be written. Hints may be gathered from works on uterine inflammation, on uterine catarrh, on dysmenorrhœa, and on menorrhagia; but all this information must be tested by a considerable number of cases, collected with a severity of diagnosis unattainable until the recent improvements in uterine pathology. I derive what I know of this complaint from a long study of its pathology, from my own errors in prognosis, and also from the circumstance that, when Dr. H. Bennet's health failed three years ago, I was called upon to justify the confidence placed in me, by realizing at once the morbid condition to which many patients had been reduced by internal metritis of several years' standing.

Before commenting on the morbid conditions of the mucous membrane lining the body of the womb, I must recal to memory that the researches of Coste, confirmed by other microscopical observers, show that the unimpregnated uterus is lined by a very thick mucous membrane. The skeleton of this membrane is formed by fibro-plastic tissue, and it is completely studded with from 25,000 to 30,000 follicles, which have a vertical direction, and are so closely pressed one against the other, that they appear to constitute the whole of the membrane when observed in the womb of a woman dying during menstruation. These glands are follicles like those which line the mucous membrane of the neck of the womb; but their secretion is watery. In the body of a healthy womb is found a small quantity of a grey or pink fluid, which is semi-transparent, and contains cylindrical epithelial cells, blood-corpuscles more or less deformed, and fragments of

fibrine. The extent of this glandular apparatus, and the more watery nature of their secretion, allow one to understand the abundant discharge of serous or sero-sanguinolent fluid which comes from the body of the womb in some of the morbid conditions of its mucous membrane. With regard to the blood-vessels of this mucous membrane, the abundance of their reticulations, which is sometimes shown by a natural injection and the delicacy of the epithelial membrane which covers them, gives a satisfactory explanation of the frequency of uterine hemorrhage as a symptom of internal metritis.

ACUTE INTERNAL METRITIS.

This is a disease so extremely rare, that it is well to relate the following case, which resembles some half-a-dozen I may have met with in the course of my practice.

CASE 34.—A lady, aged twenty-nine, tall, thin, with grey eyes, brown hair, and a semi-chlorotic complexion, consulted me in 1860. Menstruation had first appeared at fifteen, and went on regularly for some time; but for the last ten years it has been very painful, menorrhagic, and followed, for the ensuing week, by a red, mucous discharge. No attention was paid to this, but a yellow vaginal discharge, with dorsal pains and increased debility, made her at last seek advice. I found considerable congestion of the neck of the womb, with slight ulceration on both of its lips. Cooling injections, and the free application of a solution of nitrate of silver to the unhealthy mucous membrane relieved the uterine symptoms, and steel, given for six weeks, had wonderfully improved the general health, when the patient caught a severe feverish cold, which suppressed the menstrual flow, on its first appearance, and gave rise to a most exquisite pain, distinctly referred to the central portion of the pelvis. This pain was relieved by the relaxation of the abdominal muscles, so for three days and nights the patient remained sitting in bed, with the chest inclined forward. Through the abdominal walls the womb was felt not much enlarged, and a vaginal examination confirmed the fact. Pressure increased the pain. Besides pain, there was fever, sickness, sleeplessness, also an abundant sero-sanguinolent vaginal discharge, of so acrid a nature that the nates soon became extensively excoriated. These symptoms

led me to admit acute internal metritis, and my friend, Mr. Acton, concurred in this diagnosis. Ten leeches, applied on succeeding days to the abdomen, took off the keenest edge of the pain, and linseed-tea injections diluted the acrid vaginal discharge, which lasted a fortnight, and then became purulent. The abdomen was freely coated with mercurio-belladonna ointment, and covered with warm linseed-meal poultices; three or four grains of opium were given, with or without blue pill, in the course of the day, and sedative injections by the rectum, which sometimes acted like magic in subduing the pain. Very hot hip-baths were likewise soon prescribed, and the patient often remained in them for an hour twice a day, and with very great comfort. These measures much abated the symptoms of the disease, but it relapsed at the ensuing menstrual period, which came some days after being due. The pain, however, was more paroxysmal, and to a certain extent periodical, so I combined sulphate of quinine with the opium, and by this means and by continuing the measures already found useful, a second menstrual period occurred without increase of suffering, and soon afterwards the patient left for the sea-side. There was a relapse at the third menstrual period, but no more afterwards, and the patient gained flesh and strength, and in a few months she married. The brunt of matrimony was borne without causing any relapse: menstruation has been more healthy, and the general health has improved during the last two years; but there has been no prospect of a family, and I have never known pregnancy to occur in the rare cases of this description that I have met with. The protracted menorrhagia, every month for ten years, indicated a permanently unhealthy condition of the lining membrane of the body of the womb, susceptible of passing into active inflammation on taking cold. A semi-sanguinolent discharge often occurs in chronic internal metritis, but the intensely acrid nature of the discharge only accompanies the acutest period of inflammation, and on its subsiding the discharge became purulent.

ACUTE BLENNORRHAGIC INTERNAL METRITIS.—This disease has attracted little attention, and I refer the reader to my statements respecting blennorrhagic catarrh.

CHAPTER XVII.

“In cases of irritable uterus, there may be some disease of structure in a part of the womb out of the reach of examination by touch.”—GOOCH.

CHRONIC INTERNAL METRITIS.

IRRITABLE uterus, as an essential disease independent of inflammation, can only be hysteralgia, a rare disease, of which I have only seen two instances, and Scanzoni three. The pathologists who follow the letter and not the spirit of Gooch's teaching, and consider irritable uterus to be frequent, describe cases in which an excessive irritability of the generative organs accompanies various inflammatory states of the womb, of which chronic internal metritis is the most frequent. There is no disease so chronic as chronic internal metritis, for it may extend over a long period of life, giving rise to habitual discomfort and to moderate abdominal pain, but this monotony of suffering is unfortunately chequered by an occasional exasperation of all the symptoms, and these attacks often coincide with the menstrual flow, or with the period of its being due. Having clearly in mind and on paper the details of fifty cases, in which chronic internal metritis plays a prominent part, I shall give the results of their analysis, for although these cases may be classed under different varieties, they sufficiently resemble each other to warrant the deduction of general results from their comparison.*

* “From the facts and considerations which I have just adduced, I think myself justified in inferring, that the objections to the use of comparatively small bodies of facts, which arise out of the divergence of the extreme values when facts are few, and their convergence when facts are many, if not removed, are at least robbed of much of their force. Seeing that there are so many instances of coincidence between the averages derived from small numbers of facts and the true average, and so many other instances in which the averages of small numbers of facts differ but little, whether in excess or defect, from the true mean, I shall certainly be justified in making use of these averages from small groups of facts, provided that I speak of the evidence they afford with due reserve, and lose no fitting

After having thus discussed the general history of the disease, I shall take in hand its varieties, and illustrate them by select cases.

PREDISPOSING CAUSES.

AGE.—The actual age of the patients varied from twenty-one to forty, only one was fifty-one ; the earliest evidence of the disease dated from the fourteenth to the twenty-ninth year ; thirty-six were married and fourteen single, and amongst them I number four of my very worst cases.

FAMILY ANTECEDENTS.—In one case the mother died of consumption, the father was hypochondriacal, an uncle was mad, and a sister is singular. The mother of another died of consumption, but the father is hale ; the mother of a third never knew illness, but the father died of consumption ; so did the father of another, whose mother has been a confirmed hysteric for thirty years. These were single ; but a married lady, both of whose parents are strong and hale, and in whom the complaint was caused by a cross-birth and protracted labour, has seven sisters, of whom three have suffered severely from uterine disease. While on this subject, I may be allowed to mention that I am now attending three sisters for fibrous tumours of the womb, and that I attended two sisters, the granddaughters of a noble marquis, for multilocular ovarian cysts.

CONSTITUTION.—Ten out of the fourteen virgins, who suffered from chronic internal metritis, were sickly from childhood, and always remained so. This was also noted in twelve of the married patients.

TEMPERAMENT.—Out of the fifty cases, seventeen were decidedly nervous, thin, delicate, slightly made, excitable creatures ; most of them single and brunettes. The nervous temperament is certainly a predisposing cause of uterine disease, and it exaggerates nervous symptoms. In five of the unmarried, the mental powers had been injudiciously forced from the first, and all through life they had been kept in a state of excitement, by domestic annoyances and vicissitudes of fortune.

opportunity of confirming or invalidating the inferences which I draw from them. To reject such averages altogether would be to throw away very valuable opportunities of enlarging the boundaries of science.”—DR. GUY, *On the Numerical Method*, Croonian Lectures.

MORBID MENSTRUATION.—Congestion is the proper function of the generative organs for a few days every month ; but although the ovaries, the womb, and their connexions are constructed so that they may be safely congested, still congestion often becomes pathological, and morbid menstruation means this habitual pathological congestion of the organs of generation. Morbid menstruation is the most important of all predisposing causes, for it only failed in five out of the fifty cases. The date of first menstruation does not seem to predispose to disease, for if menstruation occurred at eleven in five patients, it was delayed in four others to the seventeenth, eighteenth, and nineteenth year. In ten the menstrual function was *originally* morbid, and continued so through life ; in thirty-five it was habitually morbid, irregular, too painful, too abundant, and protracted. It is only noted as scanty in four cases, and in one it stopped at twenty-eight, and there has been no menstrual flow for a year. In this case menstruation had always been scanty ; it is the only instance of early cessation out of the fifty, which does not confirm Scanzoni's assertion, that internal metritis is a frequent cause of the early cessation of menstruation. If the habitual overtaking of the eye leads to ophthalmia, how can the lining membrane of the body of the womb be overtaxed for menstrual secretion for twice the usual time, and for many successive years, without becoming unusually prone to inflammation ?

SUSCEPTIBILITY OF THE MUCOUS MEMBRANES TO INFLAMMATION.

Seven patients were unusually liable to coryza, bronchitis, and gastro-intestinal irritation. Two have told me that the slightest application of the finger to the nostrils caused them to ulcerate ; and in four cases, where it was necessary to touch the fauces with the solution of nitrate of silver for a long time, the throat always felt sore just before and after menstruation. Professor Brainard, of Chicago, has stated that the same condition of the system which produces ulceration of the mouth in nursing women, gives rise to a similar condition of the vaginal surface and of the small intestines.

Although the following case, in which there was chronic

ulceration of the os uteri, of the tongue, and confirmed dyspepsia, is not included in this analysis, it is so illustrative of the point under discussion, that I shall relate it.

CASE 35.—Miss —, aged thirty-two, is a blanched, delicate-looking lady: she passed a sickly childhood and puberty. Menstruation occurred at eighteen, and the flow has only appeared eleven times in her life. At twenty, she was attacked by ulceration of the tongue, which was situated upon its superior aspect near the point, and was of an irregular shape, about the size of a shilling. When quiescent, its surface was like that of soddened white paper, and resembled the ulcero-membranous condition of the womb already described. When rendered irritable by the slightest derangement of health, by stimuli locally applied, or by a change in the weather, from warm to cold, the ulcer becomes red and painful, and the patient cannot eat. Nitrate of silver made it worse, so did all strong applications, and even a weak solution of chlorinated soda did harm. Large doses of chlorate of potash had no effect; in fact, nothing was beneficial but warm weather, and the ulcer healed after a few months' residence in Madeira. The lady returned to England in May, and the ulcer broke out in the first cold autumnal days, and has never healed since. A stem-pessary, introduced by a celebrated northern practitioner, did not regularize the menstrual flow and was long a source of intense misery, for she left Edinburgh without the slightest notion that there was within her an instrument that it might be necessary to remove. This patient's health very much improved by my curing a simple ulcer of the neck of the womb, and by my keeping the uterine congestion in check.

LIABILITY TO CUTANEOUS DISEASES.—One of the fifty had psoriasis from childhood; another, a scaly eruption; another, wide-spreading acne rosacea; another, chronic prurigo; another, an intense pruritus of the skin.

LIABILITY TO CONGESTION OF THE LIVER.—This was a marked condition of three patients, who frequently vomited bile; two had repeated attacks of jaundice; one had passed gall-stones; and chronic congestion of the liver, by interfering with portal circulation, may have predisposed to uterine disease.

DIATHESIS.—“I can no more look on inflammation of the

os and cervix uteri as a primary disease, causing derangement of the general health, &c., than I could on a gouty toe, a rheumatic knee-joint, or enlarged strumous gland ;” so says Dr. Rigby, without enlightening us as to this cause. Spiritualist by instinct, vitalist to the backbone, I have sought to trace internal metritis, and diseases of the womb in general, to those conditions of the system that are known as rheumatism, gout, scrofula ; if I have been unsuccessful, I have at least found other satisfactory reasons, such as habitually unhealthy menstruation, a weak constitution, a highly developed nervous temperament, and a tendency to inflammatory affections of the skin and mucous membranes.

In two of the unmarried, the ganglionic nervous system was as if thunderstruck by their suddenly feeling obliged to give up long-standing engagements with men, adored, but found wanting in honour. After this shock, nutrition was impaired, ganglionic neuralgia appeared, and then uterine disease.

EXCITING CAUSES OF INTERNAL METRITIS.

Placed midway between the ovaries, and the neck of the womb, the body of the womb receives morbid influences from both.

OVARITIS.—In eleven out of fifty cases, decidua membranes had been habitually passed, and this is accepted as a proof of ovarian influence. In three other cases, though no membranes were passed, well-marked chronic ovaritis preceded internal metritis, and was in one instance recognised by Dr. Ferguson ; and I could relate three cases, in which internal metritis, with vegetations, coincided with ovarian abscess. I shall more fully treat of this cause when discussing internal metritis with decidua exfoliation.

INFLAMMATION OF THE NECK OF THE WOMB.—In most cases I believe that inflammation of the neck precedes that of the body of the womb, and often accompanies it. It is asserted that ulceration of the neck of the womb is the cause of disease in the ordinary run of cases for which we are consulted ; this is correct ; but the lesions visible on the neck of the womb are only one portion of the whole case. Do these lesions, therefore, require no treatment ? Not at all. It was the possibility of curing the invisible diseases of

the body of the womb, by thoroughly curing those visible in its neck, which may have led Dr. H. Bennet to exaggerate the influence of ulceration in uterine pathology; but if his theory was overstrained, his practice was safe, for neglected inflammation of the neck of the womb was the cause of internal metritis in fifteen out of the fifty cases. In some, disease of the neck of the womb had evidently existed for five, six, and nine years, without appropriate treatment, the cases being completely misunderstood.

NEGLECTED MENSTRUATION.—The total ignorance in which young women are culpably brought up, of the care that it is judicious to take of themselves at the menstrual periods, explains why they so often continue to walk, dance, ride, and travel, even when suffering from morbid menstruation. I have related the case of a lady, who, for ten years, had menorrhagia, followed by a red mucous discharge, lasting for eight days, and who never let this interfere with her amusements and usual mode of life. Surprise is often expressed that virgins should be liable to uterine disease; but I need only refer to my work on the *Principles of Female Hygiène* for a full appreciation of the ignorance and prejudices entertained upon this subject by women, otherwise well-informed.

MARRIAGE.—“Perfectly well before marriage, and never well since,” is the graphic history of six of my patients, two of whom were married in India. It is useless to disguise the fact, connexion has a downright poisonous influence on the generative organs of some women.

ABORTION.—Although this was only given as a cause of internal metritis in seven cases, I believe this to be below the average. Forced to dilate, when the tissues of the womb are unprepared to do so, they are always bruised, and may be lacerated, leading to defective involution, inflammation, or hypertrophy. Moreover, the firmer adhesion of the unripe placenta to the inner surface of the womb prevents its easy exfoliation and dissolution, so that a portion of it may be long retained, and irritate the uterine cavity. It has been also observed that fungous ulceration is most frequently met with in the posterior aspect of the uterine lining membrane, where the placenta is generally attached.

DIFFICULT PARTURITION.—Three had prolonged labours,

one was quite well until a cross-birth and a very protracted labour lighted up uterine inflammation, as yet unextinguished; another was delivered with a pen-knife by some ruffian, whose crime is ineffaceably written in the extensive and irregular cicatrices by which the neck of the womb is intersected. This lady was quite well till twenty-five, when this occurred, and since then she has passed twenty-eight years of great suffering. Defective involution of the womb, after parturition, was noted as having occurred in an early stage of the case, and it may have been the cause or effect of internal metritis.

SYMPTOMS OF INTERNAL METRITIS.

When most of the symptoms of early pregnancy are present, without menstruation being suspended, in comparatively young women, internal metritis may be suspected, even if the diagnosis be obscured by a large amount of inflammatory swelling of the neck of the womb. There may be sensations of abdominal fulness, of internal distress, or positive pain in the hypogastric region, a dragging, aching, or burning pain, and often the forcing tenesmoid pain of the contracting womb. One of my patients has so much pain, that for a year she has not laid down in bed. There is, in every case, more or less nausea occurring occasionally, sometimes amounting to vomiting.

MAMMARY SYMPTOMS.—Uneasy sensations of distension and soreness of the glands or nipple were generally complained of, and pain was distressing in four cases. In two married ladies, the swelled gland repeatedly discharged a muco-lacteal secretion at the menstrual periods. In one, the breasts were so enormously swelled, hot, tense, and glistening, that I feared an abscess, particularly in the right breast, where there had been one fifteen years before.

NERVOUS SYMPTOMS.—All were nervous, irritable, desponding, bewildered, subject to neuralgic and hysterical phenomena, but only three had convulsive hysteria, which does not coincide with the statement made by Dr. Routh, that internal metritis causes a strong tendency to convulsive affections. Thirty-five out of fifty could not walk without difficulty; and in most cases this depended upon loss of

power, a reflex phenomenon of uterine disease ; but some evidently did not walk, because the uterine pain was increased by the slightest tension of the abdominal muscles. Most of the thirty-five kept their beds at menstrual periods ; twenty-six habitually kept their rooms, or only walked about the house ; nine only exchanged their beds for the sofa. There was lameness of the left limb in seven patients, whenever the symptoms of the case were worse, the hip-joint being referred to as the seat of pain, and the limb being painful or numbed without any other cause to account for the lameness than the uterine disease.

UTERINE DISCHARGES.—I have said that menorrhagia is the rule. In four the bloody flow continued for months without its being possible to distinguish the period of menstruation, and thirty-nine had more or less sero-sanguinolent flow before or after menstruation. Some had a similar discharge during the whole inter-menstrual period. Two occasionally passed a black and decomposed blood after uterine colics, brought on by defæcation ; another, after severe forcing pains, passed what looked like the scaly sediments of a coffee-pot ; another something resembling brown sea-weed. Blood-clots were frequently passed with great pain in ten cases ; they were sometimes semi-organized, having been long retained on account of stricture of the neck of the womb. I have occasionally removed from the neck of the womb of one patient about a tablespoonful of what looked like curd or light brown paint. The neck of the womb being healthy, seven passed pus after uterine tormina ; three, before and after the menstrual flow, four, between menstrual periods, and always after very great increase of pain and other sufferings. A shivering fit, in one case, several times preceded the purulent secretion. Leucorrhœal discharge was frequent, and patients have repeatedly told me, that pains were less severe when there was some discharge, on which account I have had many battles to fight with a patient who wanted caustic when it would have done harm. Uterine vegetations, similar in appearance to the granulations which are known to form on the pharynx and larynx, are sometimes passed. Decidual membranes, which were submitted to my inspection, were being passed by four ; but in ten other cases, decidual membranes

were passed habitually for many years before the patient came under my care, so that the frequency of this occurrence is fourteen out of fifty.

FERTILITY.—This is very much impaired by internal metritis, for only forty-seven live children were born from the thirty-six marriages, whereas there ought to have been one hundred and forty-four, according to the average of four children to each marriage. Seven had never conceived, and with the exception of one, I do not believe the remaining twenty-eight had children, after having suffered from internal metritis. It is easy to understand that the impregnated ovum finds it difficult to graft itself on a diseased mucous membrane. In one case, it seemed as if the mucous membrane were not sufficiently healthy to allow the placenta to remain attached the full time, for on four successive occasions confinement occurred at the seventh month, the child being born dead, and the placenta atrophied so as to be about the size of a small bun.

MARCH AND PROGRESS.—It is chequered by relapses, which generally occur at menstrual periods; and this will not surprise those who bear in mind, that many cases of internal metritis are described and treated as cases of menorrhagia. If nature undoes in one week the healing work of three, a steady advance towards recovery can be no more expected than for a patient to walk well, whose half-united bones were refractured every month. Any of the above-named causes, and sometimes the most trifling, may bring on a relapse, which often occurs without any other incitement than the rekindling of a half-subdued inflammation by the menstrual process. Nevertheless, the inflamed lining membrane of the body of the womb does in time so far recover as to be able to do menstrual labour without suffering, therefore many months of comparative good health may intervene between the relapses. In this way the complaint may be said to have lasted from five to eleven years in thirty-one patients out of the fifty, and seventeen years in one case; it therefore stands to reason that complications must occur during so long a period of illness. The most common of all the complications of internal metritis, and I may say its natural consequence, is an enlargement of the womb and an increased thickening

of its walls. I believe that, as a rule, this increase is uniform, and that one is apt to think that side of the womb the largest which one is best able to explore. If these thickened walls of the womb are not very painful when pressed by the finger, and if the size of the womb varies, I consider its increase to be due to congestion. If the enlarged dimensions of the womb are invariable, and not very painful when touched, I suppose the swelling to be hypertrophic; but when the womb is always found over-sized, very painful, and almost always attended by great and complicated suffering, I believe it to be in a state of chronic inflammation. Whatever may be the right interpretation of this over-weighting of the womb, it will fall backwards or forwards in ante- or retro-version, because it is heavier than intended by nature. In four cases there was confirmed dyspepsia and enteralgia, only permitting the digestion of scanty and singular food; congestion of the liver and repeated vomiting occurred in three cases. Very few patients were without chronic irritation of the lower bowel, which is the natural consequence of that solidarity of action which I have shown to exist between the womb and the lower bowel. Uneasy sensations are referred to the lower bowel, constipation, or slight diarrhœa, with increase of mucus, partly coagulated in the motions. Two had occasionally most distressing tenesmic diarrhœa, very difficult to abate. In a great sufferer, who had previously caught rheumatism from sleeping in a damp house, I often noted a kind of see-saw between internal and external neuralgia, so that the womb was comparatively free from pain when the arms and shoulders were very painful, and *vice versâ*.

DIAGNOSIS.—So long as the lesions affect the os uteri, the hand can heal what the eye can see, and the treatment is satisfactory; or if relapses occur, through the patient's negligence or the neglect of constitutional measures on the part of the medical adviser, they can again be cured; but when the lesions exist beyond the field of vision, in the lining membrane of the neck and body of the womb, great uncertainty reigns respecting their diagnosis and treatment.

I did not correctly diagnose many of my cases until I had removed, by treatment, a large amount of inflammatory swelling of the neck of the womb, by which internal metritis was

masked. Careful consideration must be given to the history of the case, and to the habitual state of menstruation. As to the knowledge of the substances discharged from the womb, much will depend on the patient's testimony; but her record may be controlled by careful examination, both vaginal and rectal, and also by the prudent, tentative use of the uterine sound; for if it passes freely through the internal sphincter, internal metritis is rendered more probable; but in some of the cases in which pus came from the inner cavity of the womb, the uterine-sound could not enter it without difficulty. If the uterine curette has been used, it may bring back vegetations, which will throw additional light on the case. When the cervix is alone inflamed, there may be vaginitis, but not a painful spasmodic contraction of the vagina. Vaginismus is a symptom of acute internal metritis, and of chronic metritis, relapsing into acute. Whenever I find this symptom coupled with a difficulty of walking, and a marked derangement of health, I suspect internal metritis, even in absence of its other signs, and I give a very guarded prognosis, however slightly the neck of the womb may appear to be diseased.

PROGNOSIS.

The severity of the prognosis may be measured by the length of time that the disease lasted before it was recognised and judiciously treated. It takes long to cure a disease which has lasted six, eight, ten, and fifteen years, and which is liable to monthly relapses. But while it remains purely inflammatory, cure must not be despaired of; and it may be due to the slow changes that time works in the system, to the patient's being transplanted into more invigorating circumstances of mind and body, or to perseverance in following out a plan of treatment which may give the wished-for impulse to the curative powers of nature. The prognosis seems to me worse when pus has been passed than when the discharge was bloody; and still worse when decidua membranes, or vegetations, had been passed or removed from the womb. The prognosis is worse in the young than in those approaching the change of life; worse in virgins than in the married; and worse when the disease occurs without apparent cause; for it shows the deepest-rooted of all causes—the innate dis-

position to morbid action. In most of the virgins suffering from internal metritis, there was no well-marked cause, like the getting wet-through during menstruation, and the disease sprung up of its own accord in sickly constitutions. One, however, married without becoming worse ; one is so well cured, that she can take long walks, notwithstanding permanent enlargement and great displacement of the womb ; others are doing well. Those who are always relapsing, live in the midst of adverse moral circumstances ; and the first step towards treatment would be, to place the mind in a healthier atmosphere. The prognosis is still worse when there happens to exist an utter incompatibility between a patient's constitution and appropriate remedies ; for it will be obvious, that this must depend upon the same constitutional eccentricity which has caused an exceptionally severe disease to spring up of itself. Having concluded this general survey of my experience on this point, I shall illustrate the varieties I have met with by grouping them according to the kind of product by which they are more particularly characterized ; and I thus propose to submit that internal metritis may be—1. Menorrhagic ; 2. Purulent ; 3. Exfoliative ; 4. Pseudo-membranous ; 5. Ulcerative ; and 6. Senile.

CHAPTER XVIII.

MENORRHAGIC INTERNAL METRITIS.

THIS is by far the most common variety, characterized by a too abundant and prolonged menstrual flow, and by sero-sanguinolent discharges in the absence of menstruation. With regard to the sanguineous discharge as a symptom of internal metritis, there is a concordance of testimony; some authors even regard it almost as characteristic of internal metritis as rust-coloured expectoration is of pneumonia. This abundant sero-sanguinolent discharge cannot be confounded with the scanty, thick, brown discharge of the subacute inflammation of the mucous membrane of the neck of the womb. The menstrual flow is often absent, or at least is not to be distinguished from the habitual sero-sanguinolent discharges. The mucous membrane, in these cases, is intensely red, livid, or slate-coloured, rarely smooth, but often irregular, and covered with papillæ or villi easily shown under water. Aran, p. 421. This change is important, as explaining the formation of the polypoid bodies in some cases of menorrhagia. The changes in the epithelium are also very remarkable. Frequently it is entirely absent, if not over the whole surface, at least over a large portion of it; or, if it does exist, it is no longer ciliated and cylindrical, but tessellated. The parietes are said to be generally thinner than usual.

CASE 36.—The wife of a clergyman consulted me in 1861, a tall, handsome brunette, of forty-six, with a rather florid complexion. After a healthy childhood, menstruation began at eleven with a flooding; the flow was often absent for seven months while at school. On returning home she became regular, but was never strong, a long walk invariably bringing on the menstrual flow, which was always profuse. She married at twenty-nine, soon became pregnant, and in the

first month of nursing she was again pregnant, and nearly miscarried. In fourteen years she had eleven children, eleven miscarriages, and frequent floodings with voluminous blood-clots. When once the womb was empty, she always rallied rapidly, the confinements were natural, and she made good recoveries until she had twins. Since then she has often suffered from backache, has had a mucous discharge, and has lost her strength. This went on, without other treatment than tonics, until 1858, when the last child was born. She has never since been free from a red discharge, often amounting to a flooding. There were severe abdominal pains, in addition to the back-pain, which had increased, and all the symptoms were augmented by the slightest exertion. All sorts of tonic medicine had been given by two doctors, who had never examined the patient, and said that it was "the change of life." I found the body of the womb twice its usual size, the neck three times its proper size, soft, pulpy, bleeding freely from its broken-up surface, and, as it were, eaten away on one side. My first idea was cancer, but taking in account the mobility of the womb, the absence of all induration in the midst of the softened tissues, and of fetidity, in a disease which had already lasted so long, I unhesitatingly pronounced the case to be inflammatory, and one of those rare cases described by Oldham as "erectile," by Scanzoni as "varicose," as "soft, boggy ulcer," by Kennedy, and as "engorgement mou, hemorrhagipare," by Duparque. I advised perfect rest, vaginal injections with alum, zinc, and opium three times a day, and gave ice and gallic acid internally. The surgical treatment consisted in the free application of nitrate of silver to the bleeding surface twice a week, using a solution of the salt, forty grains to the ounce, and the solid stick alternately. In a few weeks the abundant red discharge stopped, and the neck of the womb could be touched without its bleeding. Twice, at three months' interval, I applied potassa c. calce to the neck of the womb, which, from spongy and red, had become firm and of a pale rose colour. The general symptoms had improved, but menstruation was hemorrhagic, with intense forcing pains to expel large blood-clots. There was a slight sero-sanguinolent discharge between the menstrual periods, and a dull heavy pain above the pubis, which was

much increased by exertion. These symptoms could not be explained by the state of the neck, but the body of the womb was still enlarged, painful when pressed; and coupling this with the symptoms, I considered the case to be one of internal metritis, to which the patient was singularly predisposed, by a tendency to profuse menstruation, all through life, and I ordered a grain of blue pill to be taken every night, and mercurio-belladonna ointment to be rubbed over the abdomen twice a day.

Finding stricture of the upper part of cervix, and feeling convinced that, by preventing the free escape of serum or blood, this condition very much increased the inflammation of the over-distended lining membrane of the womb, I dilated the neck with sponge tents. During the three or four days that the sponge tent remained in place, there sometimes came away, as with a gush and without pain, a certain quantity of watery or slightly-tinged fluid. Menstruation then became less abundant and less painful, and an interval of two months having occasionally intervened between the periods, justifies the hope that cessation may be at hand. The patient has not felt so well for many years, can walk a mile without increasing the pain, looks the picture of health, but for the next year will require careful watching.

CASE 37.—The wife of a merchant, forty-two years of age, consulted me in 1859; she was tall, thin, care-worn, and had brown hair. With the exception of repeated bilious attacks her childhood was healthy; menstruation came first at fourteen, and went on regularly; at twenty-one there was vomiting, jaundice, and gall-stones were passed, otherwise her health was so good that she could easily walk ten miles. She married at twenty-eight, and her health remained good until 1846, when a second child was born, a cross-birth, with protracted labour requiring instrumental delivery, and the patient had a bad getting-up. Within the month she removed to a newly-built house. This confinement must have caused uterine disease, for ever since the back has been more or less painful, and she has been seldom free from vaginal discharge; and although she weaned at the third month, she never menstruated during the fifteen months which elapsed between the birth of her second and the quickening of her

third child. She grew thin, and could no longer walk. She had a good confinement and getting-up, menstruation became regular, nevertheless strength diminished, back-pain and leucorrhœa became worse, bilious attacks occurred every two or three weeks, and in addition there was a fixed pain in the left hip and corresponding limb. This was another symptom of uterine disease, but it was considered to be idiopathic neuralgia; and notwithstanding menorrhagia, leucorrhœa, or a sero-sanguinolent discharge, and bimonthly menstruation, no examination of the womb was made; and although walking was almost impossible, travelling was advised. This was so far fortunate; for at Brussels the lady met a physician who recognised uterine disease, and applied leeches with good effect to the neck of the womb, and advised her to get back to town. When I took the case in hand the womb was anteverted, more than double its usual size; the neck of the womb was twice as large as usual, extremely sensitive, and considerably ulcerated round the os uteri; there was a muco-purulent or bloody discharge, bimonthly and very profuse menstruation, with uterine pain; there was great pain in the back, hips, and shoulders.

I have repeatedly noticed that the temporary disappearance of these pains coincided with a marked aggravation of the pelvic symptoms. A chamois-leather waistcoat worn over the flannel very much relieved these pains. She could only walk about the house; visiting or shopping always aggravated her sufferings, and she was in a distressing state of nervousness, despondency, irritability, and sleeplessness. I first tried the application, twice a week, of a solution of nitrate of silver with cooling injections, and subsequently the acid nitrate of mercury, at ten days' interval, which gave less pain than the milder caustic, and internally sulphate of quinine. I thus cured the ulcer, diminished the size of the neck of the womb, improved the discharge, lessened the pains, and prolonged the intermenstrual period. To prevent the tremendous outpourings of green bile, which would sometimes last for two or three days, I ordered three grains of calomel after every menstrual period, a change of mild aperients to keep the bowels regular, and occasional effervescing draughts, for I found constipation was the rule, with

occasional attacks of diarrhœa. Such was the state of things, when domestic annoyances and over-exertion near a menstrual period brought on an attack of acute metritis, which required two successive applications of twelve leeches, continual hot poultices, and mercurio-belladonna ointment to the abdomen, baths, &c. Before this patient had recovered her strength, she became again feverish, and both breasts became swollen, the right very much, being hard, red, and glistening, the swelling and pain extending to the right arm. Menstruation soon occurred, and with it a relapse of inflammation. When the patient got over this attack in the summer of 1860, I made a careful examination, and found the neck of the womb in a healthy condition, though its body was still enlarged and exquisitely painful to the touch. Surgical treatment to the neck of the womb, which had been long abandoned, would have then done more harm than good, so I merely continued the injections, and determined to try the occasional application of leeches to the womb, continuing the use of the mercurial ointment. This plan of treatment was sanctioned by Dr. H. Bennet, who met me in consultation.

The result of a first application was to me satisfactory, as it prolonged the menstrual interval, but the debility caused by disease was laid to the credit of the remedy, and I was not allowed to renew the application. Nevertheless, in the winter of 1861 there had been a gradual improvement in every way, relapses were less frequent, less severe, and were generally brought on by over-exertion; they were frequently accompanied by considerable inflammatory swelling of the breasts, particularly the right, which had been the seat of an abscess many years before, but they no longer emitted a muco-lacteal discharge from the nipple. For these mammary symptoms I freely applied to the breast, extract of belladonna diluted with glycerine, and afterwards an ointment with iodide of lead and opium.

In the summer of 1861, the patient was well enough to go into the country for two months, and about that time I met an eminent physician of Calcutta, who agreed with me in the utility of trying the long-continued action of small doses of blue pill and the application of leeches to the womb

after the menstrual periods; but I was not permitted fairly to carry out this plan, palliatives being the only treatment continued up to the spring of 1862; and if they have not succeeded in preventing an occasional severe relapse at a menstrual period, still there is a marked improvement in the liability to bilious attacks, to rheumatism, and to the swelling of the breast, which often accompanies uterine disturbance. The patient has exhibited great perseverance, and still, if I had been allowed free scope, I think I could have further improved her condition by the repeated application of leeches and by dilatation of the neck of the womb, as in the preceding case.

The principal interest of the next case lies in the fact that the patient ultimately made a perfect recovery.

CASE 38.—E. B——, admitted to the Farringdon Dispensary, Nov. 21st, 1851; was twenty-three years of age; of middling stature, very delicate appearance, and she has been sickly from childhood. The menstrual function began at fifteen, after three years of continued headache, giddiness, and drowsiness. The flow was at first very abundant, and returned once again at the regular time. Although the daughter of a major, she brought endless trouble on herself by marrying a workman, by whom she had a child at sixteen and three months, and three more children afterwards. She weaned her children at nine months, because she felt weak; but she never menstruated until about twelve months after parturition, and then in consequence of some fright or domestic altercation; pregnancy always followed the appearance of the flow. Deliriousness attended her confinements, but she made good recoveries. When first admitted a patient, she was suckling a child four months old, and was suffering from mild hysterical symptoms, which were soon subdued. On the 28th of April, 1852, she returned with an attack of menorrhagia, which yielded to cold aluminated applications, and to the internal exhibition of acetate of lead. In May there was slight leucorrhœa, burning pain in the back and in the left ovarian region; the patient felt a swelling there—I could not; but on making a digital examination, the body and neck of the womb were uniformly tender, but no lesion could be seen in the neck of the womb. I ordered alum injections, and mercurial in-

unctions to the ovarian region ; sedatives, opiate enemata ; the bowels were kept open by small quantities of sulphur and borax. June 16th.—The same symptoms persisted ; the neck of the womb was more congested. I painted it internally with nitrate of silver, in hopes of modifying whatever morbid condition might remain unseen, high up in the cavity of the neck. This was repeated every week, several times, without ill effects. July 14th.—Flooding returned, and resisted cold applications and the injection of a solution of acetate of lead, as well as its internal exhibition. It was at last checked by ten grains of ergot of rye three times a day. When no blood came away, a serous fluid did ; but this did not come from the vagina—which was *seen* to be healthy ; it did not come from the neck of the womb, for the absence of pain on lateral pressure showed it was not diseased, and when chronically inflamed the secretions of that part are viscous. The uterine sound entered freely, and seemed to move on the smooth surface of an enlarged uterus. I left off the application of caustic, and as the liver was out of order, I gave blue pill, and ordered inunctions with mercurial ointment to the lower part of the abdomen. In September salivation came on ; the sero-sanguinolent flow suddenly stopped, and she became delirious. The next day the discharge came from the womb, at first sero-purulent, then bloody, and then again sero-purulent with flakes of coagulated mucus, described as “skins.” Saline draughts, opiate injections and applications, iodide of lead ointment to the abdomen, were then tried, to allay the abdominal pain. During this time the strength of the patient diminished ; but little emaciation had taken place, although even when she was not feverish, scarcely any food was taken or sleep enjoyed. Hysterical attacks became more and more violent, and, for a few months, it was necessary to draw off the urine every day. Active uterine treatment was out of the question, for if, while lying quietly in bed, a digital examination was made, she would go off in an hysterical attack, so soon as the finger touched the womb. Tonics, steel, and acetate of morphine were given. About February, 1853, Dr. Bennet saw the patient with me, and we agreed on the urgency of pushing the exhibition of morphine to saturation point. For several weeks she took from

two to three grains of acetate of morphine daily, at first without any appreciable result, then the pains in the hypogastric region gradually abated, and some time after sleep was induced. The dose of morphine was then diminished. After the uterine discharge had lasted for more than twelve months, sometimes as a flooding, at others to a trifling amount, it ceased towards the end of August, and about the same time the patient brought up a considerable quantity of blood from the lungs; and notwithstanding repeated hemorrhage to a less amount, she had all the appearance of health, and was able to keep a day-school. In October menstruation returned, being attended by great pain and a clotty discharge. Thus, a highly nervous temperament, early marriage, repeated pregnancies, were the predisposing causes of a complaint for which it is impossible to trace a determining cause. She was often despaired of, and the cure is perhaps to be attributed as much to nature as to art. Although cured, the patient's constitution remains unaltered, and she is liable to relapses from over-work and over-excitement. As a proof that in such cases one must never despair, it is well to state that, in 1854, this patient was well enough to emigrate to one of the back settlements of Canada, lost all trace of uterine disease, and became a strong and healthy woman.

I have seen several instances more or less resembling this, in which long-continued hemorrhage was the principal symptom of a low type of internal metritis. One is related at page 387 of Dr. Hennen's translation of Boivin and Dugès. Light is thrown on such cases by those in which the uterus being inverted, the effects of stimuli on its internal surface could be demonstrated. The irritation of this surface was always followed by a sanguineous discharge.

CHAPTER XIX.

PURULENT INTERNAL METRITIS.

BEFORE admitting that pus comes from the cavity of the body of the womb, it is absolutely necessary to ascertain that it cannot possibly come from its neck; and this may be taken for granted when the cervix is only found congested, slightly painful, and without stricture. In the following cases there was little or no habitual leucorrhœa; pus was only passed on rare occasions, and always with such an amount of forcing pain, as to leave no doubt in my mind that it was expelled from the body of the womb: indeed, in one case, the womb itself appeared between the labia; and in two cases this passing of pus was preceded by a shivering-fit.

No cases have ever given me so much anxiety; none have so much puzzled my powers of discernment; none will afford more instruction to those who may study them; and they would have been called irritable uterus by Gooch. They show how fatal is the result, when innate morbid tendencies of the generative organs are associated with a highly excitable nervous system. All four were young, three unmarried, and the fourth has scarcely lived a married life, and there was ovaritis in two cases. In all, menstruation was scanty, having stopped prematurely in one, and very painful; one passed decidua membranes, and they had been previously passed by another. At other times, pelvic pains were severe. There was nausea, nervous exhaustion, and neuralgic phenomena. They can scarcely walk, and suffer much from mammary pains. They offer instances of what has been called the accumulative temperament of the nervous system, as opposed to the excitable, a condition in which consequences are so out of proportion with antecedents, that events defy calculation, and surprise by their eccentricity. All are still invalids; three have improved, but one is not much better than when she first came under my care.

The perusal of the cases will, however, show that they no more tell against the virtue of medicine in uterine complaints, than the fact of a farm requiring ten years to make it productive when it has gone out of good cultivation, proves that agriculture is not a science capable of enriching intelligent farmers. To cure these patients, the first step is to take them out of the circumstances which keep them always in hot water. Case 38 was as bad as any of the four I am about to relate, and she quite recovered when removed from the penury and anxieties of London to the plenty and independence of Canada.

CASE 39.—The wife of an officer in Her Majesty's army; was twenty-five years of age when she consulted me in 1860; a thin, slightly-built blonde, with large liquid eyes. Her father is in good health, but her mother died of consumption and gave her a constitution delicate from the first. The menstrual flow came at thirteen, and was always very painful. She started for India in 1858, fell in love on board ship, and married the day after her arrival. Connexion was always so extremely painful that it very seldom took place, and, nevertheless, it seems to have caused acute metritis, judging from the account of the intensity and nature of the pelvic pains, the vaginal discharge, and the absolute inability of walking. Here is a combination of causes sufficient to account for any amount of uterine disease,—a delicate constitution, morbid menstruation, marriage on arriving in a tropical climate, and the relaxing influence of the same. On returning to England, Dr. Rigby was consulted, who instituted local treatment and kept the patient in bed six months, and gave such tonics as he thought best suited to contend against the constitutional origin of uterine disease; but as the patient got worse, Dr. M'Andrew asked me to consult with him. I found a nervous, excitable lady, bursting into tears on being addressed, complaining of want of appetite and sleep. The abdomen was not distended; it could with impunity bear pressure on the right side, but the slightest pressure on the left side exasperated habitual pain. The vagina was hot, rugous, and spasmodically contracting, a condition lately described as vaginismus. The body of the womb seemed enlarged; the neck was certainly much swollen, excessively painful, red, but not ulcerated, and pus issued from its orifice. There was certainly acute inflam-

mation of the neck of the womb and its lining membrane : so, treating the case on general principles, I twice applied leeches, at ten days' interval, ordered linseed-tea injections with laudanum, and a belladonna and opium suppository to be introduced into the vagina at night, instead of the large doses of opium she had been accustomed to take to obtain sleep, and to remain on the sofa for the greater part of the day. On examining after the following menstrual period, I found the vagina less inflamed, the neck of the womb less red, with watery mucus coming from its orifice ; it was not placed centrally, but inclined considerably to the left, where there is intense pain, and this implies adhesions, the result of former attacks of pelviperitonitis, most likely caused by inflammation of the left ovary, for although it cannot be distinctly felt, there is fulness and tension where it should be situated. I prescribed nitro-muriatic acid in an infusion of orange-peel, and a drachm of tincture of hyoscyamus at night, mercurio-belladonna ointment to the abdomen, the belladonna suppository ; opening medicine was never required. Twice a week I syringed the vagina with a solution of nitrate of silver, forty grains to the ounce, leaving it in contact for four or five minutes. The result of this was, that when I met Drs. Babington and M'Andrew in consultation, in the summer of 1860, they both found the patient very much improved, and able to talk connectedly without bursting into tears. Fortunately, medicines were well borne, and for some weeks she took eight grains of sulphate of quinine in the course of the day, and afterwards pills each containing two grains of sulphate of iron, with half a grain of sulphate of quinine and of extract of hyoscyamus ; taking three or six a-day, for months together, without their confining the bowels or causing any other ill effects. The sedative that suited best was a pill containing two grains of extract of hyoscyamus and a quarter of a grain of Indian hemp, and one or two of these pills were taken regularly at night for many months, and only occasionally after returning from the seaside. Of injections, the linseed-tea was preferred by the patient ; a solution of a drachm of chlorate of potash, or bichlorate of soda, in a pint of tepid water, was borne ; but until lately, the solution of acetate of lead caused great internal soreness.

Suppositories were useful. One containing a grain of extract of belladonna, with three of hyoscyamus, was frequently introduced into the vagina at night ; and when stronger action was required, another suppository was passed up the bowel, containing one grain of extract of opium, half a grain of extract of belladonna, and two grains of extract of hyoscyamus. The result was, that by the summer of 1861 the general health was very much improved ; she was able to sleep without opiates, could eat much more, had gained flesh and weight, could read, write, work, and began to walk across the room, and this notwithstanding occasional fretting at being obliged to live separated from her husband, who had remained in India. There had not been, however, a corresponding improvement in the condition of the womb, for menstruation was always intensely painful, sometimes suggesting the subsequent application of three leeches, when the flow had been unusually scanty ; and between the periods there was constant abdominal pain, particularly on the left side ; sometimes there was a paroxysm of pain, lasting several hours ; and, after intense bearing-down pains, about a table-spoonful of thick matter came away at once, and sufferings gradually subsided. This expulsion of pus has occurred at about two months' interval, with increase of pain and nausea, but three or four times a fit of shivering, lasting for half an hour, and repeated vomitings, have preceded pains similar to those of miscarriage, in the midst of which pus was passed, the patient only returning to her usual state after two or three days of increased suffering. As the neck of the womb was only moderately sensitive, and its mucous membrane only secreted mucus, and as the os uteri was sufficiently open to let any fluid pass, it is clear to me that the matter came from the cavity of the womb, which was extremely tender, though not much enlarged, and it was with difficulty that the uterine sound was made to pass the os internum. Walking was a difficult undertaking, for, when standing upright, she felt as if she were falling to pieces. I very much relieved this sensation, and increased the power of walking, by prescribing one of Garriel's india-rubber pessaries, a very soft one, about two inches in diameter, which is introduced empty, after the morning injection, only half filled with air, and removed at

night. By dilating the neck of the womb as much as I could without doing harm, I diminished the pain and the frequency of the expulsions of pus, and the patient was well enough to spend two autumnal months at Ramsgate. Between that time and the spring of 1862 she has made very slow but sure progress, eating heartily, increasing in weight, and looking as if she were quite well, sitting up a great deal, and walking more and more firmly. She is able to leave town, and will, I feel convinced, get well, if she continues to submit to the subjections of an invalid life for a few years.

CASE 40.—In the summer of 1861, I was consulted by an unmarried lady, tall, thin, with brown hair, largely dilated pupils, and with a pale face, bearing marks of long-continued suffering. Her antecedents were bad, for her father died of consumption, her mother has been for the last thirty years an excessively hysterical and often uncontrollable patient. From childhood she had to nurse her mother, and to control her when no other means availed; and to strengthen the mind and harden the constitution of his children, the father took them to walk in all weathers, and sometimes at night, and made them habitually sit up late to read and write. The menstrual flow came at eleven as a flooding, and went on pretty regularly until the age of fifteen, when nursing her mother through a long and dangerous illness told on her health, and brought on uterine disease. The menstrual flow then became profuse, dreadfully painful, particularly when she rode on horseback during the periods, and between menstrual periods there was often back-pain and leucorrhœa. At sixteen, she was deeply in love, and engaged, when a lady called upon her to explain that she was in the family-way, and that her lover was the father of the child. The sudden shock was keenly felt; but gifted with great power of self-control, she let her anguish prey on her own vitals, and moved about without show of grief. A devourer of books, she read all those in her father's library, learned that there was another faith besides the one she had been brought up in, convinced herself that the Roman Catholic religion was true, and embraced it, notwithstanding the opposition of her relatives. Worn out by the persecution she had to endure from them on that account, she sought

in devotion the means of satisfying that craving for love that was denied to her by her family, and entered a convent at twenty-one. The labour of teaching, the prolonged kneeling on stone floors, and other austerities of ascetic life, made her so much worse in every respect, that she could only remain there a year ; but on leaving the convent, she was enjoined by injudicious spiritual advisers to walk three miles every day in all weathers before breakfast, to hear mass, to teach in schools, and visit the sick. The consequence was that at twenty-three she was completely invalided, and was attended by a very skilful practitioner of a large provincial town, whose name I am not allowed to mention, as it might identify the patient. He recognised uterine disease, cured extensive ulceration of the neck of the womb, and still the patient did not rally. At twenty-four, after a long railway journey, and fatiguing hunt after lodgings, the menstrual flow being due, there came a burning pain in the left ovarian region, which has varied in intensity, but never left her, during the succeeding four years, and Dr. Ferguson considered it to be caused by ovaritis. The pain of the back became worse, the menstrual periods more painful, and large fragments of decidual membranes were frequently passed, and pain, sickness, and headache increased, both before and after the menstrual periods.

After the healing of the uterine ulcer had been found ineffectual to cure the patient, leeches and blisters were repeatedly applied to the abdomen, and various ointments and plasters were used. The half pack was tried for several months, but nothing availed. The steel advised by Dr. Ferguson aggravated the head symptoms, so did quinine. Indian hemp quieted the nervous system ; but if remedies were ineffectual, it must be remembered that although leading an invalid life, the patient nursed her mother, and was kept in a constant state of anxiety and excitement by her eccentricities ; and as this not only told on her strength, but made her fear for her reason, she came to town. I found the vagina hot, very sensitive, and contracting spasmodically. The neck of the womb was soft, red, exquisitely sensitive, and without ulceration ; the body of the womb was twice the usual size, very painful, and anteverted. A round elastic substance, about the

size of a hen's egg, could be felt to the left of the womb on examining by the rectum; the gentlest pressure increased the constant burning or throbbing pain of the ovarian region, and there was a muco-purulent secretion from the os uteri and the vagina. Walking increased all habitual sufferings, sickness was considerable, particularly on assuming the erect position; it was the sickness of uterine disease, for there was no flatulence, heartburn, nor biliousness, although the tongue was white and thickly furred. Loathing of food was great, and constipation habitual. She slept little, was excitable, desponding, but had no hysterical symptoms or convulsions. Such was her state, and I learned that occasionally, after very severe dragging and forcing pains, she would suddenly pass about a tablespoonful of matter and then get better, and that this forcible ejection of pus has only occurred since she had the burning ovarian pain. The breasts were not swollen, but she suffered often from their intense aching. The diagnosis of the disease was as evident as its causes. There was acute inflammation of the vagina and the neck of the womb, chronic inflammation of the left ovary, and of the lining membrane of the body of the womb, for there was no stricture at the os uteri. It was probable that the neck of the womb had been more or less inflamed since the age of fifteen, the ovary since the twenty-fourth year, when it brought on, first the exfoliation of decidual membranes and then purulent internal metritis. Five leeches applied to the neck of the womb caused considerable loss of blood without abating the pain. Linseed-tea and laudanum injections soothed, acetate of lead irritated. The free use of mercurio-belladonna ointment to the abdomen was recommended, and at night one or two pills, containing each two grains of extract of hyoscyamus, with one of Dover's powder, and for sickness, a six-ounce mixture, containing two grains of hydrochlorate of morphine with two scruples of diluted hydrocyanic acid, a dessert-spoonful to be occasionally taken in soda-water. Warm hip-baths were advised, and milk diet, with vegetables and fish, made savoury by addition of the essence of different meats. She soon left town, and on her return in September there was no change in the case. I twice applied three leeches, once when the menstrual flow was due,

with the view to abate its usual agony ; the speculum soon filled with blood, but the leeches caused a very severe dragging pain, which increased when they dropped off, notwithstanding a copious flow of blood. When sent for, I found the patient doubled up with pain, requiring large quantities of morphine and laudanum, and warm poultices saturated with laudanum, to calm it. The following morning the menstrual flow appeared, and went on unusually well, with slight pain ; a favourable result, but too dearly bought. I then sought to improve the more tangible portions of diseased tissues by injecting a solution of nitrate of silver into the vagina ; and as this aggravated the symptoms, I returned to the measures previously mentioned, and gave a grain of blue pill every night, and to soothe the system, one or two pills containing each two grains of extract of hyoscyamus and a quarter of a grain of Indian hemp. Nitro-muriatic acid was given to improve appetite and digestion, and large doses of the hypophosphite of soda. As an external application, ice carefully tied in a very thin india-rubber bag, and applied for hours over the burning pain, often eased it much ; so did warm poultices, except when the pain was very bad. Two or three grains of acetate of morphine left in contact with the neck of the womb did not much relieve the pain. The most effectual way of doing so was by means of suppositories introduced into the vagina or rectum ; each suppository contained one grain of opium, half a grain of extract of belladonna, and three of extract of hyoscyamus. For the last year, menstruation has been oftener scanty than profuse, coming after three weeks of delay, being checked, or passing from red to white, from the most trivial cause, even from walking across the room, so much so that the patient always keeps her bed, from the coming until the subsidence of the menstrual flow. When I found leeches requisite to relieve the congestion left by very scanty menstruation, I applied them to the walls of the vagina, without giving pain or the too abundant loss of blood caused by their application to the womb itself. By these means, in the spring of 1862 the vagina and neck of the womb were in healthier condition, the discharge was mucous and scanty ; indeed, a slight discharge eased the pain. The body of the womb, however, and

the left ovary, were not better than when I first undertook the case, and for this reason, that on one occasion a sudden entrance of an unwelcome visitor stopped the menstrual flow and confined the patient to her bed for a fortnight, and afterwards the dangerous illness of her mother kept her in a sleepless agony of expectation for many weeks. She then left town to close her mother's eyes, and was thus reduced, for several months, to a state of extreme exhaustion which prevented any other but constitutional treatment. I cannot conclude this case without insisting on the utility of the common notions of physiology forming part of the education of a gentleman. A clergyman of the Church of England lays the foundation of almost interminable uterine disease by an absurd antiphysiological system of education. A priest of the Catholic Church encourages a delicate lady to adopt the austerities of conventual life, and to continue them when she was forced by ill-health to quit the convent. The knowledge of the influence of body on mind is imperatively wanted for the safe and intelligent discharge of the priestly office, to enable him to distinguish the unavoidable infliction of disease from the working of Satan; and when I say priest, I mean the ministers of every sect, who must inevitably be more or less the directors of the best of women, who are anxious and scrupulous because of their desire to advance in holiness.

CASE 41.—In the summer of 1859, I was consulted by an unmarried lady, aged thirty-one; she is a brunette, of middling stature, and very thin; her mother died of consumption, her father is confirmedly hypochondriacal, an uncle died insane, and a sister is eccentric. Delicate from childhood, she first menstruated at seventeen, and the flow was tolerably regular, but scanty. The first symptoms of uterine disease date from twenty-one, when she had abdominal pains and slight red or brown discharge, and was treated uselessly by tonics for two years, when she consulted the late Dr. Engledue, who recognised uterine disease, and advised the patient to consult Dr. H. Bennet, but before doing so she again tried constitutional remedies for two years longer. Dr. Bennet found ulceration of the neck of the womb, cured it, without, however, preventing the frequent occurrence of sharp abdominal pains,

with slight red mucous discharge ; menstruation was irregular, very painful, scanty, accompanied by decidual membranes, nausea or sickness, and inability to walk. In other words, inflammation of the neck of the womb was cured, but the patient suffered from internal metritis, which becoming worse in the winter, 1858, confined her to bed for several weeks. On recovery from this, she returned to her usual state of moderate suffering, and occasionally called on me, but in the winter she became thoroughly invalided, and has not left her house for three years, except to go to the country on two occasions, and only quitted the bed for the sofa. For many weeks she was confined to bed by excessive fixed pain above the pubis, increased by the patient's movements, and by pressure ; and besides this constant pain there were shifting pains, in the right or left hypogastric region and distressing epigastric pain. These pains were often so bad, for weeks, that she was obliged to rest, day and night, in a crouching position, with her face buried between her knees, without other sleep than snatches of morphine sleep, from which she was roused by pain. The tongue was perfectly healthy ; nevertheless nausea was so great that she scarcely took food, and vomited what she took, which was said to relieve pain when very intense, and the bowels were constipated. She was not nervous, excitable, or desponding, but frequently complained of dyspepsia, and was strangely idiosyncratic ; she could not gargle, nor bear mustard poultices, nor take baths, nor ice, nor effervescing drinks, and few medicines agreed. The womb was anteverted, two or three times its usual size, easily circumscribed by the finger on account of the patient's emaciation, and intensely painful. The neck of the womb was slightly painful, but healthy in appearance, so I adopted no local treatment, and tried a host of remedies for pain and sickness, some of which were suggested by my friend Dr. Copland, but I found nothing to suit but acetate of morphine in a weak solution of acetic acid, and thus she took daily from one to two grains of morphine ; brandy was taken to the amount of two ounces a-day. Blisters and dill-water relieved epigastralgia, and mineral acids or pastilles de Vichy corrected heartburn and acidity. Finding constitutional remedies of no use, I sought to cure by local measures, and

I first made occasional applications of nitrate of silver to the healthy neck of the womb as a counter-irritant, and because the pain was always more bearable when there was some discharge ; subsequently I dilated the neck of the womb, which at first only admitted a fine bougie. I repeatedly applied four or five leeches to the womb after the menstrual flow, which became more and more scanty and was no longer accompanied by decidual membranes ; the leeches brought away very little blood. The pain often only subsided while the leeches were drawing blood, and returned so soon as they dropped off ; and it repeatedly occurred that they were more effectual than ergot of rye to promote uterine contraction, and that, after intense forcing-pain, two or three tablespoonfuls of pus, or stuff resembling thick brown paint, were suddenly passed, as if to certify the presence of internal metritis. By these means I kept down violent pain, and the sofa could be used for a few hours, and in the summer she was able to go into the country for a few weeks. In the winter of 1860-1, she had another bad attack and was confined to her bed for three months. The following summer she passed in the country, and this is her condition in the spring of 1862. Menstruation, which came at seventeen, and was always scanty, ceased at thirty-two, about a year since. The womb is less bulky, less sensitive. The patient always complains of the usual fixed pain and of the sympathetic pains, and they must be severe, as they still prevent her lying down in bed and require her to take two grains of morphine in the course of the day to keep them under ; but I feel convinced that there is now a great amount of hyperæsthesia mixed up with chronic inflammation. The irritation of the lower bowel, habitually caused by severe uterine disease, has lately amounted to diarrhœa, seven or eight motions being passed in the day. Nevertheless she is evidently better, can attend to household duties, is about all day ; and I consider this satisfactory, knowing the constant family vexations to which she is subject, the prejudicial effect of which had been already pointed out to her by Dr. Engledue ten years ago.

CASE 42.—In 1853, a retired colonial surgeon consulted me about his daughter, who was seventeen years of age, and had suffered from painful swelling of the mammary glands ;

and she was under my care for a few weeks in the autumn of 1861. She was twenty-five years of age, a good-looking blonde, highly nervous, flushing easily, and very stout and flabby. Born of delicate parents, she resembled them in that respect. The menstrual flow came at twelve, always irregular, painful, and scanty. At fifteen, on recovering from fever, a very painful, hard swelling was discovered in the right breast, and by some it was considered malignant. By degrees the menstrual periods became worse, and there were sharp, shooting pains in the womb, between the menstrual periods; but she was able to get about until her twentieth year, when a surgeon discovered an ulcer at the neck of the womb; he cured it, and, naturally enough, promised that this would insure recovery; but with the exception of the loss of sharp, cutting uterine pains, all the other symptoms remained;—indeed, sickness, which had been bad for a few months, became worse, and continued so for ten months, although there was no biliousness nor jaundice, and nothing checked this but going to the sea-side. While sickness was so bad, she scarcely passed any urine, and it was very thick. None of the numerous diuretics which were given increased the quantity of urine. Was it because so little urine was voided, that, although she could keep down very little food, she suddenly grew remarkably stout? She became more and more nervous, and could no longer walk. Leeches were applied frequently to the abdominal walls, and tonics were given. I saw her once in 1858, when I only detected uterine irritation as a cause of hysteria. She persevered with cooling vaginal injections, but matters becoming worse, she came to town. She was in a very hysterical state, continually retching; there was only a mucous discharge; the neck of the womb was inflamed, but not ulcerated, the body was enlarged and painful; uterine pains were severe, of a forcing tenesmic character, and sometimes these were more severe, and a small quantity of matter was suddenly passed. This expulsive action was communicated by the womb to the bowels, for tenesmal diarrhœa lasted for several weeks, and was little abated by blue pill, morphia, chalk, catechu, and nitro-muriatic acid. The pains in the breasts were more complained of than any other symptom, being unusually

severe for ten days before, and during menstruation. The mammary glands felt like two hard and flattened buns, with sharp edges, and were freely moveable in voluminous breasts; menstruation was so painful, and attended by so much vomiting, that she kept her bed. I well saturated the neck of the womb with a solution of nitrate of silver once or twice a week. Sickness and diarrhœa were somewhat abated, when, without any other cause but violent forcing pains, the womb came down so as to be distinctly seen outside the vulva, a very singular circumstance in a virgin, in whom there was no unusual laxity of the vagina. The womb was replaced, and there has been no repetition of this accident. Alum and zinc injections were prescribed, as well as belladonna ointment to the abdominal skin, and suppositories, similar to those described in the previous cases, were introduced into the vagina. Twice, immediately before menstrual periods, I applied four leeches to the womb; this treatment diminished habitual pains, improved menstruation and breast pains, and I sent the patient home very much improved. Nevertheless, I took an unfavourable view of the case. There is evidence of an innate faulty organization of the reproductive organs and of the nervous system, causing so much continued ill-health, notwithstanding judicious treatment and the tenderest nursing of a devoted family.

Purulent internal metritis, as illustrated in the foregoing cases, is so often called irritable uterus, that it may be useful to append a case of what is really irritable uterus or hysteria.

CASE 43.—Miss —— walked into my study slowly, with difficulty, and dragging the left leg after the other. She was twenty-five years of age, single, of middle-stature, slender make, and delicate-looking. Her antecedents were good, and menstruation had first appeared at fourteen, and was regular and normal until the eighteenth year, when she felt herself obliged to break off an engagement with one to whom she was deeply attached. From what I know of the lady, it must have been a desperate battle she had to fight within herself; nevertheless, she appeared calm to all observers, going quietly through the regular routine of household duties without hysterics or scenes. But the mischief worked within,

disordered the nutrition of the nervous system, so as to render the unusually felt action of the ganglionic nerves intensely painful. For a few months after this event, pain in the lower part of the back and sacrum first came on, and it has continued, combined with other symptoms, for seven years, during which period she has never been well for two months at a time. During this long course of sickness the patient has often suffered from severe pain in the lower part of the abdomen, and from leucorrhœa, as well as from habitual and considerable gastro-intestinal disturbance; and to remedy this state of things, a very judicious selection of tonic and other medicines had been ineffectually prescribed. I found the vagina irritable; the neck of the womb exquisitely sensitive, of proper size, but red, without ulceration, excoriation, or abnormal hardness of tissue; the cervix full of gelatinous secretion; and there was a creamy discharge in the vagina. The patient was no doubt suffering from subacute inflammation of the neck of the womb, but it was associated with a very obstinate morbid condition of the gastro-intestinal mucous membrane. The tongue was so thickly furred that it resembled a sheepskin door-mat seen through the wrong end of a telescope, indicating an analogous state of the lining membrane of the stomach and intestines. Digestion was often difficult and painful, but the pain was chiefly referred to the hypogastric region. Habitually dull and bearable, the pain was often so sharp and agonizing that the patient gave it a substantive existence, speaking of it as "the spasm." It would come spontaneously, and be often brought on or increased by menstruation, or by the smallest quantity of food or drink, so much so that the patient often went without regular meals. Distension of the intestines often gives great pain, but in this case they were not much distended by flatus, and "the spasm" was quite independent of this cause of distress. The pain occasioned nausea, but no sickness; indeed the patient was never sick, except when opium had been given. I witnessed one of these attacks; there was intense abdominal pain without flatulence, no palpitation of the heart, but the palpitation of the aorta, to which she had been subject for several years, was greatly in-

creased; the pulse was at 130, the skin hot, and there was headache.

Besides chronic disorder of the mucous membranes, there were unusually severe forms of neuralgia: neuralgia of the intestinal nerves, to which must be referred the fits of severe abdominal pain, perhaps the dyspeptic state (although in another case, now under treatment, the abdominal pains are still more severe, and nevertheless the tongue is clean); lumbo-abdominal neuralgia, numbness and pain in the back and in the lower limbs, with difficulty of walking; neuralgia of the neck of the womb itself—the irritable uterus of Gooch, who had no speculum wherewith to view the inflamed uterus. But notwithstanding this permanent torture of so many different nerves, the patient was not nervous, no *malade imaginaire*, as stated by one physician, who advised exertion, which made her worse, but a sensible woman, reasoning soundly upon sufferings borne with fortitude indomitable; she is not hysterical, being subject neither to globus hystericus, nor to hysterical fits or convulsions. The case was called dyspepsia by Drs. Watson and Brinton—but the term would convey a very inadequate notion of the disease, and tonic remedies gave no permanent relief; neither was it simply a case of uterine inflammation, but disease of the whole ganglionic nervous system perverting the functions of several mucous membranes. And if the skin has its interminable psoriasis, acne rosacea, as well as other affections, maintaining their ground notwithstanding treatment and long lapse of years, why should one be surprised to meet with equally interminable affections of the internal skin, of the gastrointestinal mucous membrane, and of the sexual mucous membrane? With regard to treatment, assuming that the uterine disease had incited and perpetuated the neuralgic and the dyspeptic conditions, I directed my chief attention to the treatment of the womb; and indeed, all the usual remedies for neuralgia and dyspepsia had been repeatedly tried. I ordered vaginal injections to be carefully made twice a day, with a solution of acetate of lead, one drachm to the pint of water; a teaspoonful of laudanum to be added to each injection. I recommended injections to be also made twice a

day into the bowels, with two tablespoonfuls of warm milk, to which was to be added one tablespoonful of the following solution:—Tincture of hyoscyamus, one ounce; Battley's solution of opium, two drachms; and three ounces of water. The liniment to be applied twice a day to the abdomen, was to be made of chloroform, laudanum, and oil of turpentine, of each half an ounce, with two drachms of camphor and two ounces and a half of olive oil. Two tablespoonfuls of the following mixture were to be taken three times a day before meals:—Three drachms of diluted phosphoric acid, six of tincture of orange-peel, to five ounces of infusion of cascarrilla. Fifteen drops of liquor potassæ were to be taken, in a wine-glass of cold water, three times a day, directly after meals. Two grains of extract of hyoscyamus, with two grains of Dover's powder, were also prescribed as a pill to be taken every night for a few days, and then, occasionally. Walking exercise was forbidden, as it greatly increased the patient's sufferings.

Chloroform in emulsion of almonds, or tincture of digitalis, with cherry laurel water, were useful when aortic convulsive action came on. This plan of treatment was continued for some weeks with slight improvement; and, when the patient came to town, I painted the neck of the womb, inside and out, with a solution of nitrate of silver, forty grains to the ounce of distilled water, twice a week. This improved the appearance of the neck of the womb without diminishing its exquisite sensitiveness, or rendering less painful the menstrual periods, which always confined her to bed and often brought on "the spasm;" and I may say the same of leeches applied to the neck of the womb, for if they sometimes diminished the back-pain, they had no effect on hystericalgia. For three weeks my patient took three Turkish baths a week, she sweated freely, but fainted repeatedly, and they increased nausea, entericalgia, and the aortic palpitation.

Bearing in mind a very similar case mentioned by Bouchut, and cured by hydropathy, I advised giving it a fair trial. She entered an establishment, and it was only after persevering for seven months that marked improvement took place; and when I last saw her she had gained flesh and

looked better; she could walk two miles without feeling tired, menstruation was not so painful, and the back-pain and the discharge had diminished. The tongue was as furred as ever, and the aortic phenomena were kept under by the half pack. Hydropathy should not be credited with the whole of this improvement, for the total change of food, habits, and associations is a most powerful therapeutical agent.

CHAPTER XX.

EXFOLIATIVE INTERNAL METRITIS.

OUT of the fifty patients who form the chief subject of this inquiry, four were passing decidual membranes while under my treatment, and ten more had done so at an earlier period of the disease. That in fourteen out of fifty cases, or in twenty-eight per cent., internal metritis should be associated with the exfoliation of the internal mucous membrane of the womb, is a very interesting fact, however different may be its interpretation. With one exception, whenever the unimpregnated womb exfoliated its mucous membrane at menstrual periods, I have always satisfied myself that there were signs of inflammation of the mucous lining of the womb before the exfoliation occurred, and during intermenstrual periods, as in Case No. 40. I therefore admit, that for the unimpregnated womb to exfoliate its mucous membrane, internal metritis must coincide with a morbid ovarian impulse. To rightly measure this morbid influence, I will briefly explain the several ways in which the ovary influences the womb. Everybody knows that the healthy ovary produces the turgescient, softened state of the uterus, and causes it to perspire blood at each menstrual period. This wonderful physiological act has its parallel in the influence of the inflamed ovary on the womb, for it softens its tissues, and often determines menorrhagia. This I prominently asserted some twelve years ago, and it tallies with the experience of Dr. Oldham, who showed me a patient in whom chronic ovaritis had brought on swelling of the womb, a softening of its texture, and great pain on pressure. The consequence of this was the descent of the womb into the vagina, the abrasion of epithelium, and subsequent ulceration of the neck of the womb—a condition which is too often considered the only disorder—and in showing me this case, Dr. Oldham

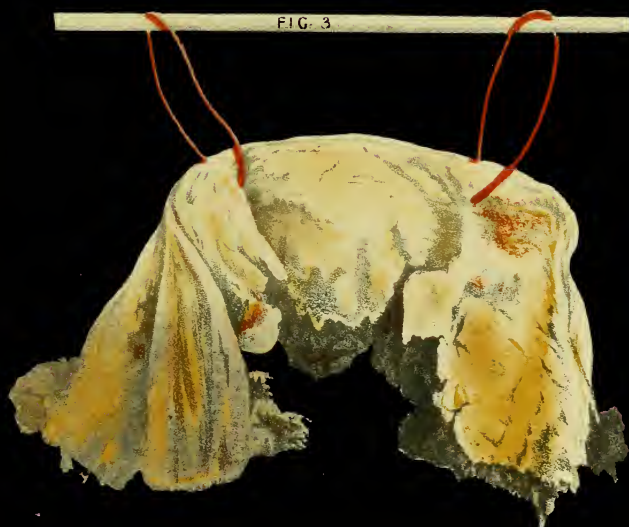
stated that he had repeatedly seen similar ones, and one will be found related by Dr. Bienfait—*Union Médicale*, Tom. VIII.

Among those who side with me, none has expressed himself in stronger language than my lamented friend Aran, who says—*Diseases of the Womb*, p. 584—"I have never met with chronic ovaritis, unattended by internal metritis, with or without ulceration of the neck of the womb. A large amount of uterine disease met with in unmarried women, which is exclusively referred to the neck of the womb, is caused by, and indefinitely prolonged by chronic ovaritis. I have also sometimes found pus on the internal surface of the womb." And again, p. 602—"It is chronic ovaritis which has furnished me with the most severe cases of uterine disease, in which health has been most affected;" and forgetting my writings, he adds, "if this remark has not yet been made, it is because the easy recognition of uterine disease has caused ovaritis to be overlooked." This coincides with the late Dr. Rigby's affirmation, that he had never seen ovarian irritation to exist without coincident derangement of the uterine functions.

The influence of ovaritis on internal metritis is proved by some of the untoward results of the abrasion of the diseased uterine mucous membrane. Thus two of Nelaton's patients died twenty-four hours after the abrasion, and so large a quantity of pus was found in the ovaries, that they must have been long inflamed. The ovarian influence which causes uterine exfoliation may be inflammatory, as in Case No. 40, for no decidual membranes were passed until the patient had the burning ovarian pain and the swelling, said to be the inflamed ovary by two practitioners; but, in many cases, there is no evidence of ovarian inflammation, and the phenomenon is the result of some other morbid ovarian influence, as in the following singular case, which I published in Dr. Beale's *Archives of Medicine*.

CASE 44.—A lady, aged twenty-five, of middle stature, healthy complexion, with brown hair and eyes, came to consult me in September, 1860. With the exception of an unusually severe coryza, which had lasted for years and been attended by a very abundant discharge of mucus, the patient had always enjoyed good health until she married at twenty-three.

Menstruation first came at fifteen, and continued regular until marriage; but ever since that period it became more painful, and was almost always accompanied by the passing of some flesh-like substance from the vagina. She was also annoyed by the frequent coming away of a large quantity of a gluey discharge, which did not yield to a very judicious combination of tonic medicines, prescribed by my friend Mr. Hammond of Ipswich, who likewise ordered vaginal injections; there was no pelvic pain and none in the back. No examination had been made. Until two months previous to consulting me, the patient's general health had not suffered, but lately she had complained of feeling weak and nervous. I found the neck of the womb congested and painful, both lips of the os uteri were deeply excoriated, and so red as to resemble a large raspberry. I considered this to be an instance of uterine inflammation produced by marriage, and the case improved under the influence of an occasional application of the solid nitrate of silver or of its solution. The menstrual period had become due; a small quantity of red mucus was daily passed. When she called on November 20th, I told her to put the feet in hot water, to inject warm water into the vagina, and to apply hot poultices to the abdomen. This brought on the menstrual flow, but it was so profuse and so painful, that Mr. Powell of Wandsworth Road was sent for. In what was passed, he detected an unbroken sac, which, on being opened, was only found to contain liquid blood, and no trace of a foetus could be discovered. When I saw the patient on the 26th, she was still debilitated by the loss of blood; there were no abdominal pains; no pains on pressing above the pubis; but the neck of the womb was very sensitive to pressure, the eroded surface was of a more fiery red, and there had been more ropy discharge. I coated the abraded surface with the solid nitrate of silver, ordered alum and zinc injections, advised mercurial ointment and extract of belladonna to be rubbed into the skin above the pubis twice a day, and iodide of potassium to be taken in a compound infusion of gentian. The uterine cast, when brought to me three days after maceration in spirit, was in two fragments, as represented in Plate II., figs. 1 and 2. When adjusted, they remind one of



2074 & 2081, 1910, to the Queen

DECIDUAL MEMBRANES

the cavity of the womb regularly distended. Each fragment is about two inches and a half in length, an inch and a half wide, and about a line in thickness. One side of these membranes has the rough and floccular appearance of the decidual membrane as it is detached from the womb, and the other side is soft, smooth, and punctuated, like the inner surface of the same membrane, by the openings of the uterine glands.

This case is well worth discussion. Health was perfect until marriage. Marriage so influenced the womb as to cause it to detach, more or less, its mucous membrane at every menstrual period. Raciborski has proposed a simple solution for this occurrence, by admitting pregnancy and a very early miscarriage in all cases of membranous dysmenorrhœa; but decidual membranes are passed at menstrual periods by virgins, by widows, by women at the change of life, and by married women living apart from their husbands. With regard to my patient, menstruation was regular, there was no sickness, nor any other sign of pregnancy; no portions of a fœtus were found by Mr. Powell, nor by Mr. Hammond on many subsequent occasions. Thus it is clear that sexual influence, operating directly on the womb, or mediately by the ovaria, had caused the periodical exfoliation of the uterine mucous membrane, the prime morbid element of the case. What is the nature of this morbid element? For the last two years there had been no evidence of chronic inflammation of the womb during intermenstrual periods, no fixed pain, no red or brown discharge, or nausea; so I do not feel justified in giving the name of inflammation to a process of the womb which only occurs at each menstrual period. This case confirms Dr. Oldham's idea, that the mucous membrane of the womb exfoliates under some influence independent of inflammation, much better than those he has himself adduced; for, in his cases, uterine disease existed previous to the passing of the decidual membranes, and a relation of cause and effect might fairly be supposed to exist between the chronic inflammation of the uterine mucous membranes and its exfoliation, as I have shown, and as my friend Dr. Bernutz has stated. Did uterine exfoliation occur at every menstrual period after marriage? The patient's report is probably correct, for ever since attention has been awakened to the fact, the mem-

branes have always accompanied menstruation. Since the membranes which I have depicted were passed, Mr. Hammond has carefully watched the case, and when I last heard from him in March, 1862, the patient remained in the same state, passing decidual membranes at the termination of each menstrual period, and at other times large quantities of glutinous discharge. The inflammation of the neck of the womb is a secondary element of the case, and was caused by the forcible distension necessary to let pass so voluminous a body as that of which I have depicted the fragments. Inflammation of thousands of mucous follicles that line the cervix, explains the abundant ropy discharge; and its alkaline nature accounts for the extensive excoriation of the os uteri. The monthly expulsion of a voluminous body through the neck of the womb, prevented tonics and injections being of much use, and counteracted the usual curative effects of nitrate of silver. I have never met with any other case of deciduous dysmenorrhœa not preceded by uterine inflammation; but is this the cause of the exfoliation, or merely a sequel? As in my case, so in many others, doubtless the inflammation of the neck of the womb is only the sequel, and could not induce that condition of the body of the womb which causes its mucous membrane to exfoliate. It is only when distinct symptoms of internal metritis are met with between the menstrual periods, thereby rendered menorrhagic and unusually painful, that inflammation of the body of the womb and the exfoliation of its mucous membrane, can be fairly considered to stand as cause to effect, and very few recorded cases contain sufficient evidence to solve the question.

Chaussier, in his letter to Madame Boivin, says, that he found a tumour hanging from the neck of the womb, with its most voluminous extremity dependent, as if it were a polypus, but the tumour was soft, easily came away, and was full of blood, being a cast of the womb, which cast had become inverted. A good instance of this is related by Dr. Vannoni of Florence.

CASE 45.—M. Marinelli had been married six years when she consulted Dr. Vannoni. She had never borne children, and for the last three years connexion had been very painful. A polypus was found and extracted from the neck of the

womb. After its removal the neck of the womb was very sensitive to pressure, and there remained a permanent state of distress and soreness, rather than pain, in the right iliac region, micturition was interfered with, and menstruation had not re-appeared, when, on the 2nd of April, 1832, five months after the operation, and at a menstrual period, frightful abdominal pains caused fever, with delirium and convulsion. The abdomen could not be touched without giving intense pain. This state of things lasted for three days, when blood passed from the vagina, at first in small quantities, then abundantly. On the third day of the menstrual flow, a considerable substance came away, and menstruation continued for the three following days. Externally viewed the substance was red, soft, and smooth, with red dots, more numerous in that portion which had lined the fundus of the womb. The upper portion of it was wider than the lower, and terminated by prolongations, which seemed the casts of dilated Fallopian tubes. The lower portion was cylindrical. The whole body was two inches long and ten lines in width from one oviduct to the other, and seven lines at its lower extremity. On being opened, it was found to be a sac, with an upper cavity of a triangular shape. The inner surface had a velvety floccular appearance, and with a strong lens it was easy to distinguish numerous vessels. It became white on being macerated in water.

CASE 46.—A highly respectable, strong, healthy-looking woman, aged twenty-four, consulted me on the 26th of February, 1861. Menstruation came at fourteen, was quite regular, not very abundant, but very painful until her twentieth year, when she began to suffer so much with bearing-down pains, pains in the back, and had so much difficulty in getting up and down stairs, that she was obliged to give up her place as lady's-maid. Menstruation was unusually painful; leeches externally applied, and blisters, gave no relief. She was for a time under Dr. Simpson. No painful treatment was adopted, carbonic acid injections were made three times, and a sponge pessary ordered and worn for a year. This treatment had been continued without favourable results for three years, when I saw the patient. On careful examination I found a virgin womb, apparently healthy, with the exception of its

being lower down than usual. The patient complained of bearing-down and back-pains coming on soon after she walked or stood about; otherwise she felt well, so I merely ordered alum vaginal injections to be used twice a day. There was no fixed surpubic pain, no brown or red discharge, which so often indicate inflammation of the lining membrane of the womb. A few days after, she brought me a membranous substance which had come away with a blood-clot during an unusually painful menstrual period. On examination I found nothing unusual in the appearance of the womb or of the upper part of the vagina; nevertheless I ordered the patient to rub into the skin, above the pubis an ointment made of extract of belladonna and mercurial ointment. The drawing, fig. 3, Plate II., is a very accurate representation of the membrane which was passed. Its upper portion is evenly defined, like the plait of a folded bladder, with rounded angles, without openings for the Fallopian tubes. Its lower outline is irregular, jagged, and filmy, as if irregularly torn off from an extensive surface. It is about two inches broad and one and a half in length. It must have lined a vaulted region, and its two sides must have been pressed against each other by a blood-clot, or some other substance. Both sides of this membrane are very much alike. It is not thick and pulpy, like decidual formations, but thin, and, after immersion in spirit, looks like soddened parchment, here and there stained with blood. It has not on one side the cribriform appearance resulting from the opening of the uterine glands. On being examined microscopically by Dr. Beale, pavement cells were distinctly found.

Has the condition which led to the formation of this membrane any relation to the patient's sufferings for the last four years? I believe it to be so. Did she ever during that period pass similar membranes? Probably; for during the following catamenial period she passed a solid substance, but as it was partly decomposed, I could only ascertain that it was similar to the one I have described, only thicker by superposition of membranous flakes. On the 21st of April, she had just menstruated, with little pain or clots, and no membrane had been passed. The patient was certainly better, had less pain, could walk more, and was told to continue the

mercurial ointment, the injections, the cold sponge-bath, and to rest a couple of hours on the sofa in the middle of the day. On the 22nd of May, menstruation had ceased; a few clots, but no membranes, had been passed, with slight pain. The patient is going to the sea-side, will bathe, and continue to use astringent injections, but leave off the mercurial ointment, which has been continued three months. I sanctioned the patient's being married in three months, believing that it would be rather beneficial than detrimental, particularly if pregnancy were carried to full term,—a rare occurrence, for sterility is the rule when the womb exfoliates its mucous membrane at catamenial periods.

The foreign body passed by this patient is so similar to one observed by Dr. Farre, that I might have used his words in describing my preparation. The absence of the cribriform appearance, the thinness of the membrane, the presence of pavement cells, led him to admit that it came from the vaginal cul-de-sac, but it may be first argued on general principles that the structure of mucous membranes becomes so modified by inflammation, that pavement cells might possibly be developed in the mucous membrane of the body of the womb, which was lined by ciliated epithelium in its normal condition; and however singular this position may appear, it is assented to by Dr. Beale, and Aran found this to be the case on examining the lining membrane of the body of the womb in those who had suffered from internal metritis. Arguing from the peculiarities of the case, it may be said that the membrane does not clearly show its vaginal origin by a well-defined tubular shape, by bearing the impression of vaginal rugæ, and by presenting a cup-like depression made by the extremity of the neck of the womb, as in other specimens delineated by Dr. Farre, about the vaginal origin of which there can be no doubt. The membrane is exactly like the fragment of a collapsed bladder, so long folded that the plait remained permanent, and one can understand that this was done by pressure of the blood against the side of a distended womb; but I cannot make out how this could have taken place in the vaginal cul-de-sac. Moreover, it is not rare in certain forms of vaginitis, for the epithelium to be thrown off in large shreds, which

look exactly like the film on the surface of liquid paint when exposed to the air. In such cases there is a certain amount of redness and sensitiveness of the vagina, whereas I found the vagina perfectly healthy on examining my patient, once immediately after menstruation, and again immediately before and after a subsequent menstrual period, on two occasions when the membranes were passed. Neither this patient, nor that of Dr. Farre, who passed an exactly similar membrane, complained of rawness and vaginal distress, which were marked symptoms of the cases related by this accomplished observer in which the product was evidently detached from the vagina. It would be singular if, while the exfoliation of a thin pellicle may be accompanied by distinct symptoms of vaginitis, the exfoliation of a much denser substance from the vagina should give rise to none at all. For these reasons I believe that this, although differing from the well-known decidual membranes, was still formed in the body of the womb, but the question requires to be reconsidered by the light of other cases.

Whatever doubt may still hang over the supposition that internal metritis precedes uterine exfoliation, it must be admitted that the habit of exfoliation leads to internal metritis; for ten of my fifty patients had, for a long time, passed decidual membranes, before I recognised internal metritis, then unusually distressing. Exfoliation entails other consequences less liable to discussion. As in Case No. 44, the neck of the womb often continues to be permanently inflamed and ulcerated, particularly if the membranes be voluminous, and if the neck of the womb has not been dilated by the passage of a child. As in this case, so in many others, the unyielding tissues of the neck of the womb cause retention of the menstrual fluid, until the occurrence of parturient efforts sufficiently strong to promote the expulsion of both blood and decidual membranes. These may be retained six weeks, as in the case of a young woman who had previously borne several children, and who expelled a triangular sac, examined by Robin, and found to be the very uterine mucous membrane itself. The habitual distension of the womb explains why, if one compares, in our hospital museums, the wombs of women who were affected with dysmenorrhæa, with those of

women who died during menstruation, it will be found that when the mucous membrane of the womb was in the habit of exfoliating, its internal cavity was much larger than usual, the mucous membrane much more injected, and the walls of the womb thicker. No other reason is wanted to account for the displacements of the womb which often accompany exfoliation. Nothing can be worse than the prognosis of such cases, even when the womb has not been in the habit of exfoliating every month for years. I have kept off the exfoliation for a month or two by leeching the womb before menstruation, and by adopting the treatment advised in this case. The tendency to exfoliation has sometimes worn itself out; at others, after continuing many years, patients have become disheartened at obtaining no relief, and have sought other advice; and the present inquiry therefore shows that, on ceasing to exfoliate, the womb only changes a more obscure for a simpler form of internal metritis.

PSEUDO-MEMBRANOUS INTERNAL METRITIS.

The mucous membrane of the womb, like any other mucous membrane, may produce pseudo-membranes which are not *decidual*. I have no case in point, but some years ago I exhibited to the Fellows of the London Medical Society, the uterus of a young woman who was under the care of Dr. Watson at the Middlesex Hospital, and who died from profuse menstruation. Dr. Watson cannot remember all the details of the case, but he recollects that it was not marked by the symptoms of acute metritis. The morbid specimen is preserved in King's College Museum, and the mucous membranes of the womb were alone diseased; both seem to have been acutely inflamed, since both are covered with a thick false membrane. This membrane is not an exfoliation of the mucous membrane, for, in that case, only the cavity of the body of the womb would have produced it; whereas this false membrane covered both the cavities of the body and the neck, and even part of the os uteri. Neither can this membrane be considered to be merely the fibrine of a blood-clot; for on closer examination, it will be found to be of a loose texture, more pointed with red where it lines

the body of the womb, and paler and denser where it lines the neck. Dance, on opening the body of a child who died of peritonitis, found the womb distended by pus, the uterine internal surface being of a deep red colour, under a false membrane of some thickness. B. de Boismont gives the case of a woman who died at twenty-one without having menstruated. The womb was distended by three or four ounces of pus, contained in a pseudo-membranous cyst, without either Fallopian or uterine aperture; the softened and uneven surface of the uterine tissue could be seen through several perforations of the cyst.

CHAPTER XXI.

ULCERATIVE INTERNAL METRITIS.

IN the several forms of internal metritis of which I have sketched the history, the whole mucous membrane was affected; whereas, in the variety now under consideration, disease is confined to a limited portion of the uterine mucous membrane, which ulcerates and produces a fungous excrescence of a considerable size, or else soft, pulpy granulations, like those growing on ill-conditioned ulcers, or on the mucous membranes of the larynx and pharynx. Recamier first pointed out this form of uterine disease under the name of intra-uterine vegetations and *fongosités*. They have been described by Nelaton, Maisonneuve, Gosselin, Robert, Robin, by Stoltz, and several professors of the medical faculty of Strasburg, amongst whom I must cite Prof. Kœberlé, who, out of 200 uteri carefully examined after death, found intra-uterine vegetations in fifteen instances. I have seen cases of this description in Recamier's practice, and three in my own. Still this form of disease has not been noticed in the most recent works on uterine pathology, either as a form of internal metritis, or as a cause of menorrhagia, most likely because it has been confounded with other lesions under the name of menorrhagia. It was not noticed by Dr. H. Bennet in his third, and only slightly in his last edition. I introduced the subject to the attention of the London Medical Society in 1853, and Dr. Routh brought it before the Obstetrical Society in 1860; but the best account of the disease will be found in the Thesis of Dr. Goldschmidt of Strasburg, from which I shall borrow some statistical data.

These intra-uterine vegetations grow from the mucous membrane, of which they form a part; they are soft, and can be removed with the finger-nail; they vary in size from that of a split-pea to that of half a small hen's-egg. When

large they are flattened out, and adhere by a broad basis to the exterior or posterior surface of the womb, and their own surface is deeply lobulated. They are sometimes found pediculated near the orifice of the oviducts ; they are yellow, grey, and of every shade of red or brown, according as they are more or less injected with blood ; sometimes they are ulcerated and present a bleeding surface. When such is the case, the red surface is seen to be evidently fed by large capillaries, which give a red tinge to the surrounding mucous membrane, constituting a kind of erectile apparatus, which makes it easy to understand how little the loss of blood from its surface can be checked by medicine, or by anything else than the destruction and abrasion of *the diseased tissues*. When examined with the microscope, these vegetations are shown to be only formed by the hypertrophied elements of the mucous membrane, the cells, fibre-cells, mucous glands, capillaries, and fatty globules. In this variety of internal metritis, as in the others, the uterine tissues are sometimes implicated ; the subjacent portion of the uterine walls being thinner and softer than they ought to be, and more liable to be perforated by any pointed instrument. Out of thirty cases collected by Dr. Goldschmidt of Strasburg, vegetation will be found to occur most frequently from twenty to thirty, or during the most active period of the generative functions, almost exclusively in married women, and generally after severe confinements and miscarriages. As they are usually found on the upper portion of the posterior surface of the uterine cavity, where the placenta is usually attached, I agree with Stoltz that intra-uterine fungous growths are probably the result of the unhealthy inflammation of the lacerated uterine surface, for it is evident that the portion of the womb to which the placenta is attached, is unusually congested during the whole period of pregnancy, and that the absolute removal of the mucous membrane with the placenta, places that portion of the womb's surface in a less favourable condition than the remainder.

Ovarian inflammation seems to have an influence even over the production of this form of internal metritis, for Dr. Rouyer mentions that Nelaton lost two patients from acute peritonitis, in whom he had used the curette to abrade the

surface of the womb. In both cases an ovarian abscess had opened into the peritoneum, but the size of the ovaries and the quantity of pus they contained, implied that their disease had originated long before the operation, which was followed by death in twenty-four hours. Bearing these cases in view, Professor Nelaton recommends a careful exploration of the ovaries, and not performing any operation if they appear to be enlarged or tender. He cites the case of a lady in whom he diagnosed the presence of intra-uterine vegetations, but refused to remove them on account of ovarian tenderness; and very soon after this patient was attacked with acute peritonitis, which was supposed—as in the other cases—to have been caused by ovaritis.

When—in the absence of a uterine polypus, or any other uterine disease—women suffer severely from uterine pains, and are continually losing blood, which sometimes oozes out gently, and at others as a flooding, one may suspect intra-uterine vegetation; but direct examination alone can render this certain. It may possibly occur that the womb is very low down, and its orifice so dilated as to permit the introduction of the finger, which may feel and remove these excrescences. But this is of rare occurrence, and it may be desirable to dilate freely the uterine canal by sponge tents, gradually increased in size, so as to elucidate the case, or else a species of uterine sound, called a curette by Recamier, may be gently introduced into the womb, and so moved as to scrape its internal surface; what is brought away with the instrument will show whether or not there are intra-uterine vegetations. The introduction of this instrument, which is a little larger than the uterine sound, is not generally painful, for though in the dead subject and in the healthy womb it requires an effort to pass the sound or the curette through the internal orifice of the womb, this sphincter is usually so relaxed in internal metritis, that instruments can easily be passed. Death may be caused by loss of blood, by the repetition of abortion, and even once it occurred by metro-peritonitis in a woman of sixty-two, in whom the distended womb burst into the peritoneum, its orifice being obliterated. Intra-uterine vegetations have, however, been discovered on opening the bodies of old women, in whom

they had not given rise to any symptoms of disease. This is the place to notice a very rare form of disease, upon which Dr. Ramsbotham remarks, *Path. Trans.*, Vol. I. :—

“The parietes of the organ become softened in structure, much as they do in pregnancy, and generally irregularly thinned in substance ; while the cavity is considerably dilated, and contains coagula, unhealthy foetid pus, and portions of shreddy fibrine, which adhere with greater or less tenacity to the internal surface. The disease,” he adds, “is interesting in three points of view—1, on account of its rarity ; 2, because, in three out of the four cases which have been narrated, it was mistaken for pregnancy ; 3, from its fatal tendency. It is unlike the more ordinary cases (although they are also very rare) that have been reported under the term hydrometra ; because in them the internal surface of the uterus has undergone no perceptible morbid change, and because the os uteri was obliterated by adhesion ; while, in the present class of cases, the os uteri remains pervious, or is only plugged by mucus.

“This patient was also suffering from mollities ossium, which went on increasing up to the day of her death, which was immediately caused by pneumonia. Two years prior to this event, she had been seen by Dr. J. Hall Davis. She had then had severe and dangerous flooding, but nothing like a foetus was discovered. Without dwelling more fully on the particulars of this case, it may be said that, up to October, 1845, she had menstruated regularly. This function ceased in April. Pregnancy was now suspected, especially as she had mammary enlargement, with a secretion of milk, morning sickness, abdominal enlargement, and a sensation as though she had quickened. The uterus, felt externally, did not appear enlarged. On making a vaginal examination, the pelvic diameter was found shortened ; the mouth of the uterus was patent ; and the cavity, measured by the sound, was five inches and a half long. The post-mortem examination was made some days after death. In addition to the preceding symptoms, the internal membrane was found destroyed at different parts by ulceration ; and the cavity contained foetid pus and broken-down coagula. The ulceration was more evident towards the cervix than at any other part.”

SENILE INTERNAL METRITIS.

In most women, the cessation of menstruation extinguishes the inflammatory affections of the womb; in some, however, it increases the congestion of its body, checking the flow, which often gives it relief. In most of these cases, while the body of the womb becomes the seat of morbid activity, its neck becomes atrophied, so as to impede, more or less, the free exit of the fluids contained in the cavity of the womb. The result of this is, that the uterus becomes more and more distended by a sero-sanguinolent, a mucosanguinolent, or a mucopurulent fluid. Severe uterine pains, of an expulsive character, repeatedly occur, till at last the fluid is ejected, and the patient recovers. This form of disease has been called the *uterine leucorrhœa of old women* by my friend Dr. Duncan of Edinburgh.

If, while the mucous membrane of the body of the womb remains in a low state of inflammation, its neck becomes obliterated by physiological atrophy, or by the pressure of a tumour determining adhesive inflammation of the cervical canal, there will be a collection of fluid in the distended body of the womb; such cases have been described as *hydrometra*. The occurrence may be attended by no pain, and may be only detected after death; or, on the contrary, it may cause forcing pains and pelvic fulness, as in the case of a woman of fifty-seven, mentioned by Scanzoni, whose womb was sufficiently distended to rise about two inches above the pubis. By astringent injections, and the use of nitrate of silver, the pains subsided, and the womb diminished to the level of the pubis. It may, however, occur either from the thinning of the uterine walls, or from excessive accumulation of fluid, that the womb will burst, as in a case recorded by Duparque, where, ten years after the cessation of menstruation, the womb burst, in a paroxysm of pain, and caused death on the following day. A large quantity of blood was found in the peritoneum, which came from a rent in the fundus, the neck being cartilaginous, and its canal obliterated. Without asserting that all these cases are the result of inflammation, doubtless many are like that in which Dr. Duncan found the uterine cavity so dilated, that it might

contain little less than half an ounce. The walls of the uterus were abnormally thin and soft, and the mucous membrane of the uterine cavity had an irregular and almost ragged surface, the depressions being apparently seats of ulceration.

The body of the womb is generally felt to be enlarged in senile internal metritis, and if it be possible to pass the uterine sound into its cavity, the manner in which its extremity may be freely moved about, shows that its cavity is unusually capacious. The discharge varies, being mucous, viscid, or purulent, and it is unusually offensive from the length of time it has sojourned in the womb. There is sickness in addition to the pains I have described.

Having thus briefly sketched what is known relative to cervical catarrh and internal metritis, it may be well to state some of the points in which they differ, as the last complaint has but little occupied the profession of this country. Cervical catarrh is very frequent; internal metritis is rare. Cervical catarrh is as often observed in the single as in the married; internal metritis seems to affect more frequently those who have borne children. In cervical catarrh the discharge is viscous; in internal metritis, serous or sanguineous, and very abundant. Cervical catarrh gives rise to no abnormal growths; internal metritis generally does. In cervical catarrh life is never compromised; it is not unfrequently so in internal metritis. Intra-uterine injections have been found useless and often dangerous in cervical catarrh, but are sometimes serviceable in internal metritis.

CHAPTER XXII.

TREATMENT OF INTERNAL METRITIS.

“IN chronic diseases, the whole man is entirely altered in his nature, and therefore to cure him one must place the whole man into the crucible.” So says Sydenham, and in some of the cases that have been related, despaired-of health was recovered by a protracted residence in a new abode, or by emigrating to another country, and although this is seldom possible, we must advise the attempt to improve the patient’s constitution by a long residence at Kreusnach and other German spas, or at least by removing her from her usual home, if it be the focus of ever-recurring vexations. The menstrual periods cannot be watched with too much care, the patient being always then confined to her room, or to her bed. With regard to special therapeutical measures, I have little to say that is not known by well-informed practitioners, but I believe that, if mercury is too often given in many kinds of diseases, it is frequently too timidly administered in rare cases, wherein it might effectually cure the patient. It is certainly justifiable to give mercury to salivation in severe intractable cases of internal metritis, and it will often be found difficult to salivate the patient. Blisters, croton oil, antimonial ointment, a silk thread seton, or an issue, may be applied successively to the abdomen above the pubis, and if the neck of the womb be sound, it may be even advisable to try the effect of potassa fusa c. calce, applied to it as an issue. Two Turkish baths a week gave great relief to one patient, and others have derived benefit from hydro-pathic appliances. There are certain general indications of treatment available in all cases, whether the uterine mucous membrane does, or does not present organic products on its surface. Thus it is necessary to ascertain by a careful

examination, whether the hemorrhage does not depend upon a polypus or an erectile development at the orifice of the neck of the womb. The menorrhagia must be restrained by the means usually recommended, among which I may mention the horizontal position in a cool temperature; the application of cloths steeped in cold vinegar and water to the pubis and to the inner part of the thighs; the injection of cold water, or cold aluminated water, to the vagina and rectum, two or three times in the course of the day. Such measures will often suffice, and they may be associated with the internal exhibition of ergot of rye, in doses of from five to ten grains three or four times a day, from which I think that some benefit is to be derived, though in many cases the practitioner will be obliged to ring the changes on mineral acids, acetate of lead, tannin, gallic acid, &c., according to the rules laid down in works on therapeutics, to which I refer the reader. The patient's strength must be kept up by such an amount of food as can be digested; but it should be taken cold. Wine and stimulants should be avoided, and all drinks should be as cold as possible. Water, or cream ices, flavoured according to the patient's taste, may be advantageously given between meals. Should the complaint determine continued insomnia and hysterical symptoms, acetate of morphine should be given, and the doses progressively increased until such symptoms abate. In one interesting case previously related, the patient for many days took from two to three grains of acetate of morphine, and I believe that it not only brought on sleep and diminished hysterical phenomena, but was also instrumental in curing the uterine disease, for the manifest improvement only set in when the patient was brought under its influence.

There are indications of local treatment which apply to all varieties of internal metritis—

1. To cure all disease of the neck of the womb, and thereby attempt the cure of its body.

2. To freely dilate the neck of the womb, to prevent internal metritis being kept up by the distension of the cavity of the womb from accumulated fluids, and also to enable its neck to bear without injury the passing of half-organized blood-clots and voluminous decidual membranes.

3. To attack the disease in its stronghold by the surgical treatment of the inner cavity of the womb, if life be menaced.

1. With regard to the first indication, I have often pointed out its obvious utility, and I need not recapitulate the various modes of treatment that may be required. In cases of chronic metritis the patients are too much reduced by loss of blood, want of exercise, and constant pain, for bleeding to be admissible, but I hold leeching the womb in great esteem, and it may be necessary to repeat the application of five or six leeches several times in succession, before or after the menstrual period; but when the neck of the womb is very sensitive, swollen, red, and giving a soft spongy sensation to the finger, I have found that leeching the womb sometimes gave an amount of pain that can scarcely be described, and caused a loss of blood very detrimental to the patient's strength. When such is the case, I now apply the leeches to the vagina, and with very good results.

2. The dilatation of the neck of the womb may be useful in all the varieties of internal metritis; in the metrorrhagic, as a means of preventing the distension of the womb, and of facilitating the discovery of the condition of the internal mucous membrane by means of the curette; in the purulent and the senile variety, dilatation has enabled me to abate the pains by which the expulsion of pus would be otherwise attended. Dilatation is equally useful in the exfoliative variety. Even when it does not seem to be absolutely required, I have dilated the womb, with the view of accustoming its neck to allow the passage of a foreign body without too much pain, and feel confident that I have thus given great relief. Except in rare cases, it is only necessary to use moderate sized sponge tents to obtain all the advantages to be derived from dilatation.

3. "Diseases that nature cannot cure may be cured by hygiene and remedies, and if not by these, by fire and steel." This teaching of Hippocrates is fully applicable to the treatment of internal metritis, and in a comparatively small number of desperate cases it is necessary to try severe surgical measures, which should be always prefaced by the previous full dilatation of the neck of the womb. This is particularly necessary

before injections are made into its cavity. Vidal de Cassis, Hourmann, and other French practitioners, have tried injections of a solution of nitrate of silver in what they term uterine catarrh. Acute peritonitis occurred in some of their cases, several of which ended fatally; but I have already shown that French pathologists have confounded some half-dozen different diseases under the name of uterine catarrh. To give an idea of the kind of cases in which the French have tried uterine injections, I shall relate what Becquerel did at La Pitié in 1850. He chose seven women, in all of whom the neck of the womb was more or less acutely inflamed; the orifice was larger than it ought to have been, and surrounded by erosions; the discharge was muco-purulent. An india-rubber catheter was introduced into the womb to the depth of an inch and a half, and by means of a syringe, a solution of nitrate of silver, of two grains to the ounce of water, was injected. Out of the seven patients, three were suddenly seized with symptoms of severe metro-peritonitis, from which it is true they recovered, but without being cured of the original uterine disease, only one at least out of the seven was cured. These cases could not have been worse chosen, for while the neck of the womb was acutely inflamed, its body might have been in a healthy state; and although the india-rubber catheter did not penetrate into the cavity of the womb, the solution of nitrate of silver did, and coming in contact with a surface the sensitiveness of which had not been blunted by long-continued morbid action, metro-peritonitis ensued. The fatal result of uterine injections in such cases does not imply that they would not be useful in others. Although such is my opinion, I have seldom employed injections into the womb, being deterred by the knowledge of the uncertainty of their action. Sometimes a strong solution of nitrate of silver can be injected into the womb without much reaction; at others, a decoction of nut-leaves, or a solution of alum, brings on acute peritonitis. This uncertainty of action is met with even in the same patients; thus, in one of Recamier's cases, vegetations had been removed from the womb, its cavity had been twice cauterized without determining any reaction, when it was thought advisable to inject a little tepid water into the womb, and this was very soon

followed by symptoms of acute peritonitis. In three of Becquerel's cases, peritonitis ensued after a second, third, and fourth injection, the previous injections having produced no ill effects. Should uterine injections be deemed useful, a weak solution of tincture of iodine would be the best fluid to use, and the best instrument, that which was suggested to Dr. Mackenzie by the sight of Mr. Coxeter's ingenious instrument for laryngeal injections. I should, however, caution those who might use it to press lightly on the fundus of the india-rubber receptacle, otherwise the fluid would be projected with too great force.

To injections, I prefer the cauterization of the internal surface of the womb with Lallemand's caustic-holder; this has been done by Recamier, by Velpeau, and Dr. Bennet, who says, "that he has carried the solid nitrate of silver into the cavity of the womb in internal metritis, or else the acid nitrate of mercury as a last resort, and sometimes without success." To cauterize the womb, Chassaignac uses a thick platinum wire, coated with nitrate of silver, so as to prevent the chance of a fragment of lunar caustic remaining in the womb. I am not aware that cauterization of the womb has been tried in the exfoliative variety, but I deem it justifiable in a case like that of the lady who has now been passing decidua membranes every month for years. With regard to the senile variety, I agree with Dr. Duncan, who advises the regular use of cauterization by nitrate of silver, applied every third or fourth day to the interior of the uterus, by Lallemand's caustic-holder. After each application, the discharge is altered in character for a day, and subsequently diminished in quantity till it gradually disappears. Although it is out of place, I may here remark that this same instrument, uncharged with the caustic, may be used to bring from the interior of the uterus specimens of the discharge, unchanged by passing through the canal of the cervix uteri and vagina. Another remedy has appeared to him to be of marked service, namely, irrigation of the cervix uteri and vagina with water considerably below the temperature of the body, which is easily effected by a Higginson's syringe, a syphon, or some other suitable apparatus.

In a case of internal metritis, Recamier, finding the neck

of the womb much dilated, introduced his finger into its cavity, and scraped off the vegetations with his nail. This suggested to him, some forty years ago, the idea of doing the same with an uterine sound, made of German metal, and he called it a *Curette*, because it was analogous to an instrument used for the operation of lithotomy. The curette is an uterine sound, blunt, somewhat curved at its extremity, and hollowed out on its curved side, as is shown in the figure.* It should be introduced into the cavity of the womb, like Dr. Simpson's uterine sound, and then gently pressed on the internal surface of the womb so as to detach any soft foreign bodies that may be present. Should it be ascertained by this means that the internal surface of the womb is free from all morbid products, all further instrumental interference would be objectionable, inasmuch as it must do harm. Should the curette, on the contrary, detect roughness, and bring away some of the morbid growths previously described, their removal from the womb is an indication of first-rate importance, since a rapid cure has sometimes followed the operation, and no improvement can take place so long as they remain; and this method of treatment is also applicable to the cure of menorrhagia when caused by retained portions of placenta, by hydatid growths in the early stage of their formation, by epithelial cancer, and by mucous polypi. The speculum would in general render the operation more difficult. Recamier generally followed up this treatment by cauterizing the internal cavity of the neck of the womb with the solid nitrate of silver, by means of an instrument resembling Lallemand's caustic-holder. Two cauterizations were in general sufficient, and in some of his cases, this treatment not only stopped the menorrhagia, but caused the womb to contract, and thereby to return to a right position, from retroflexed, which it had been for years.



* The instrument is twice the size of the figure, and may be obtained of Mr. Coxeter.

These operations have been performed in the presence of Paul Dubois, Blandin, Guerin, and many others; and repeated by Maisonneuve, Robert, Gosselin, and myself. In the course of 1852, Nelaton and Nonat published several cases of it in the *Gazette des Hôpitaux*. The first effects of the operation are, to increase considerably the habitual hypogastric pain, but this does not last long, and on its disappearance, the habitual pains likewise disappear, as well as the fœtidity of the discharge.

Guided in this respect by the opinion of our mutual friend, the late Dr. Aran, Dr. H. Bennet strongly discountenances this mode of treatment; but as Aran's opinions are at variance with a large amount of equally good testimony, and as this serious operation is often followed by the cessation of pain and hemorrhage, and by menstruation becoming more regular, I ask, is nothing to be risked when menorrhagia is interminate, and when the patient's health is sinking from the effects of abundant sero-purulent discharge, for which the neck of the womb gives no explanation? In such cases, fortunately rare, is it not rational to enter the cavity of the womb with a blunt instrument, in order to interrogate its surface, and to remove those superficial abnormal productions which have been known to produce the symptoms I have detailed? The risk is not so great as might be supposed; for though pain may be much increased, peritonitis will only occur in very rare instances, for Recamier performed the operation on 100 patients, and only lost three by peritonitis. In two cases, peritonitis was caused by the passage of the curette through a previously softened portion of the womb, which was thus transfixed by the instrument. In the third case, Professor Nelaton, who made the post-mortem examination, was not convinced that death was caused by the operation; no trace of metritis was found, neither had the curette made a false passage. Pus was found in both the Fallopian tubes, but as the patient was opened twenty-four hours after the operation, it is difficult to suppose that it was produced by the operation. Dr. Richard, of Paris, likewise perforated the womb with this instrument, but the accident was not followed by untoward symptoms; and if the operation be objected to, on account of the possibility of this occurrence, one must renounce

also the use of the uterine sound ; for Dr. Aran has assured me that, using it with the greatest care, he twice perforated the womb, but without the bad results that might be anticipated, probably because there was no escape of blood into the peritoneum from the punctured wound. A very large volume could be filled with the fatal effects of false passages made in attempting to sound the bladder, and still surgeons continue to perform this operation. I have heard of several fatal results of false passages made with the uterine sound, still most practitioners feel themselves justified in using an instrument of which Prof. Simpson has well demonstrated the utility. For the same reason, I feel warranted in advocating the use of the uterine curette, notwithstanding accidents, which will show the necessity of using it with intelligent gentleness. No deaths took place in thirty cases in which the curette was used, and which form the subject of Dr. Goldschmidt's thesis.

The following is one of three cases in which I have had recourse to this procedure :—

CASE 47.—Mrs. L——, an American lady, placed herself under my care in 1850. She was thirty years of age, anæmic, and much debilitated. The menstrual flow first came at fifteen years of age, and she was regular until pregnant. She married at twenty-five, had a child at twenty-seven, and soon recovered her strength. At twenty-eight she again conceived, and during the whole of that pregnancy suffered much from abdominal pain. The placenta was adherent, and was removed with difficulty. It was long before she recovered her health, but it remained tolerable for a few months, when she was obliged to wean the child for want of milk. Menstruation then returned, and was unusually painful and abundant. When the flow ceased, the abdominal pains remained, and hysterical symptoms supervened ; the menstrual flow returned several times at the regular epoch, but always more or less as a flooding, and the abdominal pains increased. The flooding next came on during the intermenstrual periods, and when that ceased there was a discharge like water, which sometimes had an offensive smell. Alum injections had been tried, steel and tonics given ; but the patient's health com-

pletely failed, and a sea-voyage was recommended. During the sea-sickness the uterine discharge had almost ceased, and the patient rallied; but a few weeks after her arrival in England, the old symptoms returned, and the patient, when I saw her, had been for some time confined to her bed or the sofa. On examination, the neck of the womb was found larger than usual, but pressure gave no pain; the os uteri was patulous, but the mucous membrane lining the neck was pale, and the os uteri without any lesions. The body of the womb was double its usual size, and very painful on pressure. On introducing the curette, the os internum was found dilated, and the end of the curette evidently moved in an enlarged womb; its internal surface felt rough. I gently moved the instrument backwards and forwards, and brought away about half a teaspoonful of what I could only compare to proud flesh, broken off from the surface of a wound. This was followed by considerable pain and flow of blood, but both abated during the next day, and there was evident improvement during the week. Ten days after, the operation was repeated, and I removed about a teaspoonful of similar products. This operation was also followed by great pain and loss of blood, but both symptoms soon abated, and the patient had no more sanguineous or serous discharges. The abdominal pains and tendency to hysteria lasted for a long time, but steel and tonics removed them at last. About three months after the last operation, menstruation returned, and on making an examination some time afterwards, I found that the os internum admitted the curette with difficulty, and the body of the womb had contracted to little more than its habitual size. In this case, the adherence of the placenta seems to have originated the disease, and the menstrual nixus gave it a first impulse. The flooding and the serous discharges were evidently caused by the morbid products on the internal surface of the womb; after their removal the patient rapidly recovered.

In two instances I removed the vegetations from the internal cavity by means of the curette, and nature did the rest. In another, after applying the speculum, and removing as much as possible of the uterine mucus, I covered the

extremity of the uterine sound with cotton wool, which, when saturated with tincture of iodine, I introduced into the cavity of the womb. The neck of the womb absorbed part of the tincture; on removing the sound, I again saturated the cotton, re-introduced and pressed it about in various directions. This was not followed by much pain, and three days after some of the vegetations came away, with a sero-purulent discharge. I repeated the operation with similar results ten days afterwards, and then the case did well. This plan of treatment has been followed by Dr. Routh, who has published several cases, in which, after dilating the neck of the womb, he brought it down by means of a hook, so as to be able to examine its inner surface with the finger, and then scraped the mucous membrane and injected tincture of iodine. It has been thought necessary by some to repeat the abrasion of the uterine mucous membrane more than once; thus, out of twenty-six instances—

One abrasion was made in	10 cases.
Two or three abrasions in	2 „
One abrasion and subsequent cauterization with nitrate of silver in	4 „
Two or more abrasions, with subsequent use of nitrate of silver, in	10 „

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In dealing with internal metritis, one must bear in mind Sydenham's observation, that in the treatment of chronic disease we often wish to go too fast, and trust too little to nature, and Abernethy's remark, that chronic diseases require chronic remedies. I do not know a more difficult task than to buoy up the hopes of patients reduced to despondency by repeated relapses. It cannot be done without great faith in the powers of nature and in one's own skill, added to the patient's belief that her medical adviser is also a friend. Even if constitutional peculiarities are such as to cause remedies to fail, one may truly hold forth the hope of ultimate recovery at the change of life, for internal metritis almost always disappears at this period.

One must, however, be aware that this disease retards cessation beyond the average age of forty-five, and that one out of my fifty patients, in whom the change occurred a year ago, still continues to suffer, although not so severely.

As it ascends from the os to the fundus uteri, disease becomes less and less frequent, but more and more difficult to understand, to detect, to cure; and it will be found that obscurities thicken and difficulties increase as I proceed to investigate the diseases of the ovaries.

PART III.

ON INFLAMMATION OF THE OVARY.

CHAPTER XXIII.

Inflammation is more frequently sub-acute than acute.

SUB-ACUTE OVARITIS.

SYN.—Chronic ovaritis; secondary pelvic inflammation.—Dr. Kennedy. Folliculite—Vesiculite simple.—Négrier. Abdominal inflammation—Menstrual colics—Amenorrhœa—Dysmenorrhœe hystéralgique.—Gendrin. Dysmenorrhœa—Menorrhagia—Hysteria.

DEF.—Swelling of the ovaria, with increase of heat, and pain upon pressure, accompanied by intermittent or permanent pain or uneasiness in the ovarian region, radiating to the loins and thighs, and producing, according to the constitution of the patient, an arrest of menstruation, or its profuse flow, intense local pain, or hysterical symptoms.

I accept the term inflammation as it is usually defined, and submit that in the present state of our knowledge it would be unjustifiable presumption to deny the existence of inflammation, except when proved by purulent or solid deposits. When mucous membranes are inflamed, as in gleet or ophthalmia, the anatomist can often discover nothing but doubtful hyperæmia. Mr. Simon, in his paper on “Sub-acute Inflammation of the Kidney”—*Transactions of the R. M. and C. Society*—correctly observes, “that what is notoriously true for mucous membranes is no doubt equally so, though less notoriously, in respect to glands. No intestinal effusion of lymph need exist in a gland to warrant its being accounted inflamed; its inflammation may consist only

in functional derangements, and may be recognised by admixing its albuminous products with those of normal secretion; but while a mucous membrane sheds its inflammatory secretions, and gets rid of them, the glands are embarrassed by the retention of these secretions, and thus an irritation, insignificant as it may be on a mucous membrane, in a gland may serve to originate its complete disorganization." Leaving the reader to apply to the ovary Mr. Simon's train of reasoning on sub-acute inflammation of the kidney, I proceed to state that, by *sub-acute* inflammation as distinguished from *acute*, I do not so much imply a difference in the intrinsic nature of the morbid phenomena, as a lower type of the same phenomena, and in other cases a limitation of the inflammatory action to certain distinct parts of the ovaries, as the ovarian follicle, and to portions of the ovarian tissue so small, that they give rise to little swelling, and to no febrile action; and here I may point out, as a peculiar property of the sexual system in women, the liability to inflammation of very limited portions of the generative apparatus, the others not participating in it—a peculiarity to which the ovary is still more liable, on account of its isolated position. Sub-acute ovaritis, whether primarily developed as such, or supervening on the acute inflammation of the ovaries, is generally a chronic disease, from the circumstance of the ovaries being subject to a periodical augmentation of nervous and sanguineous excitement. Chronic ovaritis is always sub-acute; and as sub-acute inflammation of the ovaria is often present without being chronic, I have thought it best to adopt an appellation which suits both, and draw attention to the low condition of the inflammatory process. It is a general law that acute inflammation of organs is very rare in comparison to the frequency of their sub-acute affections. The kidney does not escape this law, neither does the ovary, although, as will be seen, its sub-acute affections may be unnoticed or confounded with others.

It is evident, however, that in the determination of causes, in the symptoms, and in the treatment of these two diseases, there will be great similarity, and they may pass the one into the other, the sub-acute being exasperated into the acute, while acute ovaritis sometimes becomes sub-acute or chronic,

as it is then generally termed. I admit two degrees of ovaritis:—1st, the sub-acute; 2nd, the acute; and in attempting for the ovaries what has been so felicitously done for other organs, I shall endeavour to show that the groups of symptoms associated under the term of amenorrhœa, dysmenorrhœa, menorrhagia, and hysteria, are sometimes the mere symptoms of sub-acute ovaritis. I stand not alone in this belief. Clarus distinctly says that he considers the disorders of menstruation to be the symptoms of chronic ovaritis: J. Frank, Rigby, and Charles Bernard strenuously advocated the same doctrine.

CHAPTER XXIV.

Inflammatory lesions of the skin and mucous membranes frequently leave no traces after death.

MORBID ANATOMY OF SUB-ACUTE OVARITIS.

ON inquiring into the anatomical conditions of the ovaria during ovulation, I find that there is a sanguineous turgescence of these organs, and an appearance of bloodvessels on and in the vicinity of the vesicle, which often, like a small nodule, protrudes from the ovary. This is followed by a gradual thinning, progressive absorption, and bursting of the vesicle. This congestion and subsequent ulceration and cicatrization, when observed elsewhere as an effort to eliminate a foreign body, are called inflammatory; they attend the natural function of the ovaria, and are therefore phenomena as physiological as those of dentition; but this physiological excitement may merge into the pathological condition, called inflammation, as it does so frequently in dentition.

I must also note that during pregnancy the ovaries assume a new mode of existence, as if to prevent the useless fructification of germs; the ovaries swell to double, or more than double, their usual size; and the firm stroma becomes so softened that the follicles may often be enucleated. Now all this is a physiological, although a little understood condition, and must not be confounded with the inflammatory softenings which I am about to describe. As with any other organs bounded by a serous membrane, the ovaries and peritoneum may be separately, distinctly, or simultaneously the seats of inflammation. It is so fully admitted that, in no part of the body are adhesions, false membranes, and other products of inflammation so frequently found, as in that portion of the peritoneum which covers the generative organs of woman,

that it is useless to cite authorities. Some authors—Dugès, amongst others—assert that, without exhibiting any false membranes, the peritoneal covering of the ovaries and the Fallopian tubes may still present signs of inflammation; the peritoneum being thicker than usual; the subjacent cellular tissue having lost its transparency, being white, or else exhibiting spotted or striated suffusions caused by the infiltration of a thick opaque serosity, of a white, pink, or yellow colour, or else distended with a gelatinous substance. It would be wrong to infer the previous existence of small abscesses from the cicatrices on the surface of the ovary, for they are not to be distinguished from the physiological ulceration of ovulation.

In sub-acute ovaritis, the ovary weighs heavier, and is slightly increased in size, or it may have double its usual dimensions, and be resisting and elastic; on pressure it yields a sensation of fluctuation; its surface is either smooth, polished, and glistening, or it may be irregularly corrugated, so as to resemble the outward appearance of the liver in cirrhosis, or of the kidney in the more advanced stages of albuminuria. Its tissue is more red than natural, though less resisting; congested with blood, as described by Négrier, or moist with a sero-viscous fluid, called spermatic by Bonnet, Lieutaud, and others, in consonance with what was then the name of the ovaria, *testes muliebrum*, and in harmony with the current opinions of the day. It is traversed by irregular bands of cellular tissue, which sub-divide a red granular mass.

The vesicles have been found presenting *individually* evident signs of all the different stages of inflammation, although surrounded by a perfectly healthy stroma; the parietes of the vesicles highly vascularized, so as to look like red currants, friable, lined with false membranes, or full of laudable pus—minute, but unerring testimonials of previous inflammation. The proof of their chronic inflammation has still more frequently been observed. They may be hypertrophied, of the size of a pea, or larger, round, or falciform, with an extremely dense white internal membrane, having a polished surface of the thickness of parchment. They may be also found pellucid, having interposed between them and the parenchyma of the

gland one or two other distinct membranous layers, with or without intermediate granular matter. They may contain either a green, yellow, or fatty liquid, or a pulpy substance, like the interior of an encephaloid cyst, or even solid saline concretions, as observed by Morgagni. Duplay relates, as a case of ovarian apoplexy, one in which the ovaries were found studded with blood-clots, and when these are voluminous, they may have been confounded with real corpora lutea; and if I correctly understand Dr. Montgomery, he admits that some of the false corpora lutea he has so well described, are the result of slight inflammatory action localized in and about the vesicles; which explanation is adopted by Aran and myself. The peculiar function of the organ must be borne in mind, so as not to consider inflammatory the vesicles which have undergone some enlargement, and then become blighted; their liquid contents being partly absorbed, the follicles being no longer fully distended, look like wrinkled sacs, of a white or of a grey colour. Sub-acute ovaritis generally affects both ovaries, and is often associated with chronic inflammation of the lining membrane of the body of the womb. These lesions have been cursorily noticed by embryologists or physiologists studying the ovaries from their own peculiar points of view; but now that attention has been drawn to the importance of morbid ovarian action in many a pathological problem, the numerous ovarian lesions will be studied with the microscope and other resources, now called to his aid by the anatomist, and more will be known of the morbid anatomy of the ovaries. In recording these lesions, and ascribing to them their due value, it must not, however, be forgotten that the ovaries may be partially and even seriously inflamed, without the power to perform their proper functions being permanently compromised. Does not the substance of the lung recover from the solid state, and again become permeable to air when the patient is cured of acute pneumonia? I do not, however, suppose that, in every case, an ovarian swelling, capable of being detected in the living body, would always after death present some of the lesions I have described. Many conditions of the skin and of the mucous membranes, which are evidently inflammatory, vanish after death—why should not the same occur with sub-acute

ovaritis? Lisfranc was convinced that all the morbid appearances of inflammation of the body of the womb might thus disappear. The liability of the Fallopian tubes to chronic, as well as to acute inflammation, is proved by their often presenting undoubted traces of its having existed. The tubes are found two or three times larger than usual, and have a slaty colour; their walls are thickened, so that the passage is narrower than in the normal state. The mucous membrane is grey, thickened, and can be easily detached from the subjacent tissues. In the oviduct may be found muco-pus or pus; but, according to Aran, it is not possible to make it pass from the tube into the womb, or in other words, there is seldom any dilatation of that extremity of the oviduct which opens into the womb. The opposite extremity of the oviduct is often dilated by the accumulation of mucus, the consequence of the obliteration of the fimbriated extremity, which may be fastened down by false membranes in all sorts of ways.

CHAPTER XXV.

“How frequently have authors noticed the numerous morbid lesions of the ovaries! But of what avails such information if they do not describe their causes?—KRÜGER.

CAUSES OF SUB-ACUTE OVARITIS.

I SHALL investigate at considerable length the causes of sub-acute ovaritis, so as to preclude the necessity of recurring to them when describing the acute form. The causes of both diseases are the same, different effects being produced by the difference of their intensity and the variety of their combinations; besides, as the ovaries give to woman all her female attributes, by an acquaintance with the causes of ovaritis, those of the diseases of women in general become known. The causes of sub-acute ovaritis are, like those of other diseases, predisposing and exciting.

PREDISPOSING CAUSES.

The principal predisposing cause is to be found in the nature and functions of the genital organs; for although in woman the ovary is, anatomically speaking, separated from the oviducts, excepting during the first few months of foetal life, in a physiological point of view the generative intestine is *one* in woman, as it is so anatomically in many of the lower animals; for whenever these organs are called into functional activity, they unite and become one organ; in a pathological point of view they are also *one*, so constant is the interchange of morbid stimuli between the different portions of the generative organs. Thus, during menstruation and the orgasm of sexual intercourse, the Fallopian tubes obey an elective impulse, in virtue of which the fimbriated extremities embrace that particular part of the ovaries whence

an ovule is to escape, so as to receive it, and the fluids by which it is accompanied—a fact which has been occasionally noticed in women dying during menstruation. This attraction is the more extraordinary, because at that time the Fallopian tubes are full of mucus, which would seem to forbid the adhesion of the fimbriæ to the distended ovary; and still this attraction is strong enough to resist the sudden passage of the bladder and intestines, from a state of repletion to that of vacuity. To render this easier, one of the fimbriæ is generally longer than the others, and is attached to the ovary so as to act on the Fallopian funnel in its vicinity. That the fimbriated extremity of the Fallopian tube embraces the ovary during coitus, and when the animal is in heat, has been stated by numerous authors, and positively by Cruickshank, in the following words:—"The Fallopian tubes, independent of their black colour, were twisted like writhing worms, the peristaltic motion still remaining very vivid. The fimbriæ were also black, and embraced the ovaria—like fingers laying hold of an object—so closely and so firmly, as to require some force, and even slight laceration, to disengage them."—*Philosophical Transactions*, 1797. De Graaf observed similar phenomena in a woman who had been killed by her husband, on his detecting her in an adulterous act. The periodical congestion of the ovaries was strikingly exhibited in the patients observed by Verdier, and by Dr. Oldham. I may therefore admit, that if by any cause this state of congestion were carried to a greater degree than ordinary, or protracted beyond the usual time, inflammation might attack the organ itself; and I find that in many published cases, ovaritis supervened instead of the menstrual discharge, or in the midst of it. The fact of the physiological irritation of the ovary being susceptible of passing into true inflammation is confirmed by the phenomena of ovulation, as they may be studied in the lower animals, and may be accidentally met with in woman.

With regard to ovaritis originating in ovulation, few will deny the possibility of this occurrence, if they have ever held in their hands the ovary of a woman in whom the process of ovulation was actively progressing at the time of death; for they will remember the projecting follicle, the diameter of which in-

creased from three lines to from five or eight,—a soft and fluctuating projection with a central point of brickdust hue, surrounded by its rich plexus of vessels, and where the follicle would soon have burst. Those who have carefully studied this wonderful process will be ready to admit, that from being a strictly physiological process, it may sometimes become pathological, and that ovulation may, like dentition in children, be associated with inflammation. My views on this point have been for some years before the profession, so I prefer to support them by a quotation from Dr. A. Farre's admirable article in the *Cyclopædia of Anatomy and Physiology*:—"How closely the process of ovulation, in its more obvious conditions, is allied to inflammation, has already been shown. A high degree of vascularity of the part, with increased exudation of fluid and consequent enlargement and tension of the entire organ, terminating in spontaneous laceration of its coats by a process very similar to ulceration, and often preceded and accompanied by a more or less considerable escape of blood: these, together, form a combination or series of processes closely allied in their nature to inflammation, and frequently evidenced by signs usually regarded as characteristic of inflammatory action."

Dr. Ritchie, speaking of healthily performed menstruation, describes the ovarian cells as "passing from the centre of the glands, and perforating the peritoneal coat, in the way of a most gradual and progressive intestinal absorption. The thinning process in the outer covering of the ovaries is so slow, that it is often inappreciable by the naked eye, at a time when, by boiling and by other expedients, the actually-begun absorption of the peritoneal coat may be easily demonstrated. The solution, in its continuity, generally corresponds in extent with the size of the subjacent vesicle; but in the vesicle itself, the opening is never more than barely sufficient to give exit to the ovulum. Ovulation coinciding with menstruation in women who have died from disease has been described as a much more active process. In general, the blood exuded from the surface of the vesicle forms a clot which distends it, but Pouchet has sometimes found the capillaries ruptured in the vicinity of the vesicle; and he adds—p. 137—"two or three times I have found amidst the fimbriæ the whole

blood-clot which had escaped from the very extensively lacerated vesicle." Raciborski remarks, that as in woman the ovarian vesicles never have a diameter less than fifteen or ten millimetres, and contain a blood-clot about the size of a small cherry, it is not impossible that the amount of blood liberated from the ruptured capillaries of the ovaries may be, under certain circumstances, greater than the peritoneum can bear with impunity, and it will be shown hereafter that some sanguineous pelvic cysts have this origin. The phenomena of ovulation in sows, rabbits, cows, &c., are thus described by Pouchet—p. 134—"Where the vesicle will soon rupture, there appear signs of intense inflammation, and the peritoneum and subjacent cellular tissue become very red and vascular." And—p. 136—"This intense inflammation has so diminished the coherence of that portion of the ovary which surrounds the vesicle, that it breaks down under the slightest traction, and when the vesicles have attained their full development, their culminating point seems to be formed by a mere pulp. Sometimes the gentlest traction applied to a vesicle which was but slightly ruptured, will cause it to burst, and to expel the blood-clot which it contained." "In the midst of these widely-torn surfaces there sometimes appears a black patch, which has all the appearance of gangrene." The reader will find depicted—Fig. 1, Plate 8, of *Pouchet's Atlas*—these extensive ruptures, which he has not unfrequently found in the sow, "and which," says he, "coincide with the more intense inflammatory action of the ovary."

If all this is healthy ovulation, I can only say that it is uncommonly like inflammation; or if, as Dr. Ritchie affirms, this is unhealthy ovulation, I agree with him, and give it the name of inflammation. It is evident that, in many cases, the mature follicle becomes surrounded by a mass of hyperhæmic tissues, and the stroma round the cell becomes turgid, softened, and ruptured. This rent surface, doubtless, heals without secretion of pus, in the same way that the vast surface to which the placenta is attached generally heals without any purulent secretion. In both parturient surfaces, vascular action is worked up to an inflammatory point, all looks inflammatory, but it is not so unless some pathological stimulus intervene. The stroma round the cell becomes

turgid, softened, and almost inflamed, like the gum over the child's tooth, therefore, it cannot excite wonder that, at times, the ovary should then really become inflamed. One might as well wonder that the gums often become inflamed in dentition, since that also is a physiological act. "If an advancing tooth," says Dr. Meigs, "may excite such maladies as are attributed to the dentition in children, what must be the extent and power of complication of the ovary in the monthly act of eliminating the ovulum? And," he adds, "I should think we have greater reason to be surprised at the rarity than at the frequency of ovarian diseases, when we know that this process is for so many years performed every month. In admitting that menstruation may coincide with ovarian inflammation, I am not single in my opinion, for Gendrin states, "that the menstrual nîsus may rise to an inflammatory type, causing the ovarian pains so common in women, and the ovarian phlegmons so frequently met with in women during menstruation;" and again, "the rupture of the ovarian vesicle is necessarily followed by inflammation; and its accidental exaggeration is nothing more than ovaritis, which so frequently occurs at menstrual periods."

Dr. Jenner, who was the first to unravel the intricacies of the continued fever occurring in London, has several times seen acute ovaritis originate suddenly in the midst of menstruation. In a late instance, during this period, pain suddenly occurred in the left side; and it was so acute that the patient was literally doubled up. By a vaginal examination, Dr. Jenner detected an ovarian swelling. The patient died a few days after; but unfortunately no post-mortem examination was made.

The position which I brought prominently forward in 1850 has been supported by Aran, Charles Bernard, Négrier, and others. In reporting to the Société de Chirurgie on C. Bernard's *Memoir on Ovaritis*, Moutard-Martin admits "the intimate connexion between menstrual derangement and ovaritis." Scanzoni, adopting my views, observes that "the maturation of a *superficial ovule* is simple; but when *deeply* buried in the ovary, the whole of it may become intensely hyperherniated. It becomes soft, fragile, and of a deep red colour; ruptured vessels and extravasated blood may be

found not only in the other follicles, but also in the ovarian stroma. In such cases the bursting of the follicle is accompanied by a deeper wound of the tissues."

Négrier has recently described what I call subacute inflammation of the ovary, as *vesiculite simple*; he states that all the inflammatory phenomena are confined to the follicles; but the assertion does not admit of proof. Even Dr. Ritchie regards as probable, "that an habitually excited nervous and vascular orgasm of the ovaries is often an introduction to their inflammation," so there is little difference of opinion between us.

In thus considering as causes of ovaritis, first, the congestion of the ovary, which has been seen to accompany menstruation, secondly, ovulation, many eminent men agree with me: but if there be anything original in what I advanced in 1850, I still maintain it in 1862, and believe that, in some cases, dysmenorrhœa is chronic ovaritis relapsing every month. I have no doubt that in some of these cases ovulation coincided with menstruation; but whether this be the case or not the argument is not affected, for should an inflammatory form of ovulation occur between menstrual periods, it would naturally account for a relapse of chronic ovaritis at the subsequent menstrual epoch. Although admitting and ably supporting my chief statements respecting ovaritis, Aran denies the frequency of ovarian exacerbations at menstrual periods, but he repeatedly owns that chronic ovaritis is subject to interminable relapses; and when discussing the treatment of this disease, he admits that there is no other way of judging of improvement, except by the state of menstruation; and that one can only conclude that the case is progressing favourably, by the fact of the menstrual periods being more and more painless and regular—I want no more to prove my thesis. Respecting the reason why, in some, menstruation and ovulation is thus morbid, it seems to be the result of an innate defective organization of the reproductive organs, causing the menstrual function to be unhealthily performed from first to last. This will sometimes occur in women of average strength and without any great temperamental bias, but ovaritis is most frequent in the delicate and nervous, particularly if they present the charac-

teristics of the ovarian temperament. Seven of Pistocchi's cases were nervous patients of warm feelings, but in many of my own, although the patients presented the characteristics of the ovarian temperament, they had always been indifferent to, if they had not loathed the marriage rites. Women with long eyelashes, blue sclerotica, and scrofulous antecedents, are said to be most liable to ovaritis, by Burns, Jepherson, Copland, Boivin, and Dugès; and some of my cases have presented these appearances. Let me suppose the phenomena of menstruation taking place in one of those delicate girls whose constitution I have indicated—who may perhaps, in her childhood, have been subject to mesenteric deposit, or tubercular peritonitis, not uncommon in children, followed by adhesions of the uterine appendages, and a swollen state of the ovaries. The first establishment of menstruation may be attended by serious disturbance, and its return often accompanied by the painful symptoms hereafter to be described. Marriage may give an additional impulse to the morbidly disposed ovaries. If, by conception, the ovaries are placed in contact with their final stimulus, this may awaken in them a diseased action, which otherwise might have remained dormant for a time, or have completely disappeared. Abortion is not unfrequently brought on by the nervous ovarian impulse soliciting the expulsion of the fœtus; or the uterus may be bound down by adhesions, which preclude the possibility of its expansion. Should childbirth occur, with its attendant determination of fluids to the pelvic organs, how fatal to ovaries predisposed to disease may be this superabundance of materials and vitality with which they are for a time entrusted!

Sexual stimulus is not unfrequently a cause of sub-acute ovaritis in newly-married women, as the effect of the first impression of a novel stimulus, and its imprudent indulgence. Dr. Ritchie admits that this is frequently the case, and Dr. Nonat, of Paris, has drawn attention to it.—*Gaz. des Hôpitaux*, Feb. 28, 1850. But it is more especially the sequel of prostitution. Walter and Renaudin state, as the result of their experience, that the ovaries of prostitutes are seldom without some morbid lesions, and Dr. Oldham has lately confirmed their assertion by describing these lesions, which are chiefly those of ovaritis, and they may be reputed to have caused those

alternations of amenorrhœa and menorrhagia, which are a consequence of prostitution according to Parent-Duchatelet.

When marriage occurs late in life, it seems as if the ovaria, having been debarred their proper stimulus when most needed, become so accustomed to the privation, that when the stimulus is at last presented to them it produces a morbid impression. This is only one instance of a general law, for when an organ does not receive its normal stimulus, it expresses its instinctive desires by some perturbation of nervous function, which, from being local, may react on the system; thus, as the stomach is irritated by a meal taken long after it was due, and is followed by indigestion and dyspepsia, so the ovaries, when they only receive their stimulus late in life, become irritated, or determine nervous reactions. This may account for an assertion made by Retzius, that women of a certain age who have borne children, and have not suckled them, are liable to ovaritis.

Sub-acute ovaritis may be the consequence of marriage during the change of life, in which cases it may react on the uterus so as to produce those sudden floodings which so often terminate menstruation. Marriage is, therefore, dangerous during the dodging, and for some time afterwards, for the periodical congestion which has lasted for so many years does not at once subside, continuing long after the menstrual flow has ceased; and as this ovarian congestion is not relieved by its accustomed discharge, the ovaries and womb are liable to inflammation, if such a result be not carefully warded off by repeated purgatives and judicious bleeding, according to the practice of our medical forefathers. This crisis in female life is particularly dangerous, both to those involuntary nuns of a society overstocked with women, who have impatiently borne the burden of their virginity, and also to those who have given themselves up to excesses of sexual indulgence. If the absence of sexual stimulus may, in certain women, give rise to ovarian irritation, this is still more likely to occur in those who are suddenly denied the matrimonial stimulus to which they had been long accustomed, as in young widows, whom Hildenbrand considers to be often attacked with this complaint, and still more so, when intercourse, after having been habitually inordinate, is suddenly prevented, as in prostitutes,

many of whom, when placed in confinement or in penitentiaries, become subject to hysterical symptoms and abdominal pains hitherto unexperienced by them. I cannot close the catalogue of predisposing causes without including certain influences which I shall call, for want of a better name, psychical causes. Intense desire is a sort of intuitive appropriation, determining organic movements resembling those required for the material gratification of the desire, and this has led some physiologists to assert with Buffon, that long continued unsatisfied desires are more detrimental to an organ than its over fatigue. These desires which, though natural in themselves, are often pampered by bodily and mental inactivity, and systematically excited by thoughts, books, pictures, conversation, music, and the fascinations of social intercourse—burning desires, which cannot be quenched by their legitimate satisfaction—at least, in our capitals, on account of the greater proportion of marriageable women than of men, are not relieved by that natural collapse which should follow a state of vital turgescence. If, as we are told by naturalists, birds, without the congress of the male, lay eggs, under the influence of impressions calculated to promote sexual feelings, such as the crowing of their mate; if, as is well known, the bitch, the sow, and other animals are, even in the virgin state, occasionally subject to spurious pregnancy, or to an increase of size, sometimes protracted to the full time of pregnancy, and followed by a secretion of milk—of which state, fresh confirmations have been lately given to the Edinburgh Obstetrical Society—one must admit the influence of sexual incitements, of a psychical nature, on the formative power of the ovario-uterine organs, and I may fairly infer that similar incitements on the mind of females may have a stimulating effect on the organs of ovulation. I have frequently known menstruation to be irregular, profuse, or abnormal in type, during courtship, in women, in whom nothing similar had previously occurred, and that this protracted the treatment of chronic ovaritis and of uterine inflammation. The phenomena of spurious pregnancy which, in unmarried females, gives rise to hysteria or dyspepsia, may, as Dr. Laycock believes, depend upon ovarian irritation, and may be the product of the causes under discussion. Dr.

Dusourd attributes even to these causes a still greater influence. "Les lectures et les entretiens erotiques," says this observer, "les tableaux fictifs de l'imagination, excitent bien plus les organes de la génération que la présence des hommes. Ils exaltent tellement, que j'ai vu plusieurs fois des inflammations se développer aux parties génitales par cette seule cause, sans attouchement et sans action des agents extérieurs."

One must not forget how powerfully the same causes operate on man, and as they promote in him the secretion of the seminal fluids, it may be inferred that they produce an analogous effect on woman. When one considers how much of the lifetime of woman is occupied by the various phases of the generative process, and how terrible is often the conflict within her, between the impulse of passion and the dictates of duty, it may be well understood, how such a conflict reacts on the organs of the sexual economy in the unimpregnated female, and principally on the ovaria, causing an orgasm which, if often repeated, may *possibly* be productive of sub-acute ovaritis. The left ovary is evidently more liable to idiopathic inflammation than the right, for in adding seventeen cases of sub-acute ovaritis, mentioned in my first edition, and sixteen, which I have carefully noticed since then, I obtain a total of thirty-three, of which cases nine occurred on the right side, seventeen on the left, and both ovaries were affected in seven patients. I have collected from various sources twenty-six cases of idiopathic acute ovaritis. It occurred on the right side in seven cases, on the left in fifteen, and both ovaries were affected in four instances. In nine other cases of acute ovaritis mentioned in this work, it occurred on the right side in five cases, on the left in two, and both ovaries seemed affected in two cases. Adding these three lists, it would appear that idiopathic ovaritis is met with—

On the right side in . . .	21 cases,
On the left side in . . .	34 „
On both sides in . . .	13 „

so that it occurred on the left side only in 50 per cent. of cases. My experience, therefore, confirms the assertions of

Dr. Rigby, Chereau, Tanchou, and Pistocchi, upon a point which is not without interest, because the right ovary is said to be most frequently affected with ovarian dropsy, and also because, according to the statements of Grisolle, iliac abscess occurs much more frequently on the right side. Neither can it be out of place to mention that in birds the right ovary is rudimentary, while the left does all the work. The ornithorhyncus presents the same peculiarity; and it has been thought that the left ovary is more liable to be irritated than the right, on account of the varying condition of the rectum, which enters the pelvis towards the left. Dr. Gordon, however, writing on puerperal fever, says: "In all the subjects I dissected, the right ovarium was affected, the left sound; and in all the three cases, that ovarium was affected in which impregnation had taken place." Roux has pointed out the congenital shortness of the vagina, as being not an unfrequent cause of ovarian and uterine inflammation in those who are placed under matrimonial influences. In one patient with a very short vagina, an evidently enlarged ovary emptied itself three times in the first eighteen months of married life, the pus being passed by the vagina. The lady's mother had been similarly affected after her confinements.

EXCITING CAUSES.

The puerperal state is differently estimated as causing ovaritis in from forty-four to seventy per cent. of the cases that occur. Blennorrhagia is by some supposed to cause ovaritis in twenty-nine per cent., menstrual disturbance in from ten to twenty per cent., and mechanical causes in one per cent. Besides inopportune surgical interference, falls on the feet, on the knees, or on the sacrum, have brought on ovaritis; blows, violent jolting on horseback, riding, particularly at menstrual periods, and immediately afterwards, have had the same effect. Harvey, Blumenbach, and other naturalists, affirm that, at certain times, many female birds willingly submit to masturbation, and shortly after lay imperfect eggs. Pouchet believes that similar practices may produce spurious pregnancy in woman, or morbid ovulation and inflammation of the germ-gland. Hufeland and Harles are of this opinion, and they have published—*Hufeland's Journal*,

Tom. II., p. 184—the case of a girl, thirteen years old, who from her infancy was addicted to masturbation, and in whose left ovary was found a piliferous cyst. Onanism was habitual in two of Prof. Pistocchi's patients, and in his sixth case, the practice had been pertinaciously adhered to from childhood; to cure this habit, and to strengthen the constitution, marriage was advised, but as connexion was painful and brought on cataleptic fits, the unfortunate woman again resorted to onanism to satisfy her feelings. Without denying the preceding statements, I believe that masturbation is far more frequently the symptom of ovarian and uterine disease. In many distressing cases of onanism, there was considerable inflammation and ulceration of the neck of the womb, and on this being cured, the habit was abandoned. From this I infer, that uterine disease was the principal cause of those frightful cases of onanism detailed by Tissot and others, who had no accurate means of investigating uterine disorders. Onanism is seldom discovered by relatives, and can only be guessed at from the enlargement of the pupils, the peculiar excited manner on the casual approach of a man, from the increased size of the clitoris, and the hypertrophy and vascularity of the labia, which are moistened by thick transparent mucus. A friend of mine was lately consulted for a girl seventeen years of age, in a large and very respectable school for the children of those who had known better circumstances, and he found that retention of urine had been produced by a glass bottle which had been introduced into the vagina, and could not be extracted without surgical assistance.

MECHANICAL PRESSURE.

The structure of the ovary is never so well exhibited as in women who die immediately after confinement, says Roux; and his statement is justified by its increased size, the diminished density of its structure, and the greater development of its blood-vessels—circumstances which give to the ovaries of puerperal women a spongy texture, and predispose them to ovaritis. This may be determined by the mechanical pressure of the softened ovary, between the impregnated womb and the hard structure of the pelvis during a laborious

labour. The action of this cause is further shown from what Mr. Taylor—*Med. Gaz.*, May, 1848—observes, respecting the causes of *post-partum* pelvic abscesses which did not arise in puerperal fever. Thus, out of sixty-one cases, a probable cause is mentioned only in fourteen; three were cases of instrumental labour, four lingering, in four, abscess came on after exposure to cold, two occurred during puerperal fever, and one after the operation of version.

In 29 cases, 15 were 1st confinements

„	5 were 3rd	„
„	4 after 5th	„
„	3 after 4th & 2nd	„
„	2 after 7th	„

In 33 cases collected by Mr. Bell—

25 were 1st confinements

5 after 2nd	„
3 after 3rd, 4th, & 5th.	

With regard to age, the majority occurred between twenty-three and thirty. From the above circumstances, I conclude, that although no cause could be assigned in the majority of cases, yet that first confinements, labours requiring the assistance of art, or prolonged from impaction of the head and exposure to cold, render the patient more liable to the affection. Doubtless some of these were cases of cellulitis, but I agree with Dr. Lever, that any disproportion between the child's head and the pelvis of the mother will increase the likelihood of subsequent inflammation of the ovaries and Fallopian tubes.

A possible cause of ovaritis may be deduced from the proper function of the oviducts. They are the means of conveying the ova and a portion of the menstrual discharge from the ovaries to the uterus. Many suppose they convey the semen—by a species of capillary attraction—from the womb to the ovaries: they have been known to transmit pus from the ovaries to the womb, and when enlarged, they may, by capillary attraction, convey pus from the womb to the peritoneal covering of the ovaries. This is an explanation advanced by Haller and Cruveilhier, and more recently by

Professor Martin of Berlin, Nowitz, Foster, and Vocke, who have described under the name of salpingitis, that peritonitis which follows the escape of pus from the oviducts into the peritoneum. The mechanical effects of retention of the menstrual flow are, the repletion of the womb and the Fallopian tubes, their distension by muco-blood, and the regurgitation of this blood into the peritoneal cavity. It has even been proved that, in some rare cases, the distension of the Fallopian tubes is so great as to detach the fimbriated extremity from the ovarium, allowing a flow of blood into the peritoneum, and thus producing peritonitis—*Archives Gén. de Méd.*, 1848—and if this possibility of a regurgitation of blood from the tubes into the peritoneum be not admitted, how can Botal's case be explained, of a woman, who died very suddenly four hours after syncope, and in whom abdominal effusion of blood was found unaccompanied by any rupture of the neighbouring vessels; or that given by Smellie—Vol. III., Obs. xiii., p. 338—of a woman who died during her confinement, and on the peritoneal surface of the uterus a large clot, fifteen inches long, and twelve broad, was found, equally unaccounted for? This explanation is that of Ruysh and of Mme. Boivin, who, on opening the body of a woman, found the pelvis full of blood, and, after a careful but unsuccessful search for another origin of the hemorrhage, concluded that the blood had passed from the womb to the peritoneal cavity by the Fallopian tubes.

Blennorrhagia is a well-established cause of ovaritis. Morgagni—*Epis.* 44—quotes, as worthy of credit, a case related as vomica of the ovaries, by Panaroli, who found an abscess in both ovaries of a woman who had long suffered from gonorrhœa. Blennorrhagic ovaritis is admitted by Ricord, Vidal de Cassis, Nonat, and other Paris surgeons, as a result of blennorrhagia, occurring under circumstances similar to those which produce swollen testicles in the male when affected with gonorrhœa. My friend Mr. Acton takes the same view, and states, that in his long experience of the Paris venereal hospitals, he has had opportunities of observing these metastatic inflammations from the uterus to the ovaries. Lisfranc even goes so far as to affirm, that in cases of blennorrhagic ovaritis alone, is it possible to assert that

inflammation of the ovary has been the point of departure of the pelvic tumour. Prof. Pistocchi believes that, in two of his cases, acute ovaritis was caused by gonorrhœa, which seems to me evident in one instance, and in others detailed by Dr. Bourraud. No one has done so much to elucidate this subject as Dr. Bernutz, and if, out of ninety-seven cases of pelvi-peritonitis, twenty-eight were said by him to have owed their origin to blennorrhagia, it must be borne in mind that for two out of the three years in which these cases were collected, Dr. Bernutz's field of observation was l'Hôpital de l'Ourcine, whither are directed, in Paris, all syphilitic patients applying for relief, and who are not prostitutes. With regard to the period of the blennorrhagia at which peritonitis appeared, it was ascertained, in fifteen out of the twenty-eight cases, that the attack occurred in one, about the tenth day after the beginning of the infectious complaint; in another, on the twelfth; in three cases, about the fifteenth; in one, on the twenty-first; in seven, about the twenty-eighth day; in one, six weeks, and in another, eight weeks, after the outset of the contagious disease. From this it appears that the attack of pelvi-peritonitis is generally brought on by the recurrence of menstruation; but, in some cases, the attack could be traced to over-fatigue, or to the continuance of connexion notwithstanding blennorrhagia. To deny the possibility of blennorrhagic ovaritis, reminds one of J. Hunter's denial that the testicles could be affected with syphilis. But notwithstanding this analogy, and the stronger proof afforded by the testimony of the authors quoted above, the disease is thought to be very uncommon by some, for Dr. Simpson states, that having carefully sought for it in several hundred cases of gonorrhœa in the Lock Hospital of Edinburgh, he only met with one doubtful case; and a writer in the *British and Foreign Review* expresses his surprise that his experience should coincide with that of Dr. Simpson. Neither is acute ovaritis marked by Martin Hassing as one of the complaints found amongst the ninety-two prostitutes examined by him at the General Hospital of Copenhagen, supposing he looked for the disease, for one must not forget that Mme. Boivin owns to have only detected two, out of thirty-seven cases of puerperal ovarian abscess, revealed by

post-mortem examination. Mr. de Méric has lately published three cases, and the following instance is related by Dr. Vidal de Cassis—*Traité de Pathologie Externe*—who mentions having seen several similar at the Hôpital de l'Ourcine.

CASE 48.—A woman had been suffering for some time from intense blennorrhagic inflammation of the vagina, when the uterus became inflamed, and afterwards there appeared undoubted symptoms of ovaritis. There was acute pain in both ovarian regions, though this was not much increased by pressure ; but by a careful exploration it was easy to discover a swelling. The thighs were painful, and subject to cramp. There were sickness, headache, and fever. Ten days after the first appearance of ovaritis, when the pain had abated, the speculum was used ; a great quantity of foetid pus came from the os uteri, and it was thought that this pus passed from the ovaries, through the Fallopian tubes, into the uterus, which on the application of the speculum, contracted, to eject its contents.

CASE 49.—A girl, aged nineteen, was received into the Hôpital de la Charité, April 1, 1838. She presented all the appearances of typhoid fever, and complained of very acute pains in the lower part of the abdomen, which were considered to indicate intestinal ulceration ; but subsequently she owned that she had been leading a very gay life, and that she was then suffering from an acute blennorrhagic affection. The typhoid symptoms grew worse, and the patient died. Those intestinal ulcerations were found, which in Paris almost always accompany fever ; the genital organs were more or less inflamed,—so was also the membrane lining the Fallopian tubes, and these contained a certain quantity of purulent matter. Their uterine extremities were found obliterated. The peritoneal surface was perfectly healthy, except in the vesico-uterine cul-de-sac, where soft, pulpy, and thin false membranes covered the womb and part of the bladder ; similar productions were found in the recto-uterine space, extending all over the broad ligaments, the ovaries, and the extremities of the Fallopian tubes, one of which was completely obliterated, while the other, although surrounded by numerous false membranes, still communicated with the peritoneum. In this

case, reported by Dr. Mercier, the morbid phenomena were admirably confirmed by the post-mortem appearances; inflammation was gradually transmitted from the vagina to the peritoneum, obliterating the free extremities of the oviducts, and binding them down to the adjoining organs. The like phenomena no doubt take place in prostitutes, and produce sterility. They had the same effect in a woman who was treated for a gonorrhœal complaint by Mr. Wetherfield, of Henrietta-street, Covent Garden, and in whom the disease was accompanied by violent pains in both ovarian regions, and a marked swelling in one. The patient recovered; but although she had previously borne children, and was young, she never again became pregnant.

CASE 50.—M. C., aged thirty-six, small, and of a delicate constitution, entered La Charité, September 29th, 1830. She had contracted gonorrhœa two months previously, and a fortnight before this, she had taken three tablespoonfuls of copaiba. The gonorrhœal discharge, which was then abundant, was suddenly suppressed, and severe pain arose in the left hypogastric region. Chomel detected a swelling in the place of the left ovary, and twenty leeches were applied over the spot, with poultices, which at first relieved the patient, but she became much worse. October 26th was a catamenial period, but without the menstrual discharge. The swelling in the left ovarian region increased; there was frequent diarrhœa in November and January, and pus was sometimes detected in the stools. The patient died January 20th, and on opening the body there was no trace of peritonitis; the womb and right ovary were healthy, and in the place of the left was a tumour as large as a small orange. The superior and anterior portions of the rectum were perforated, and the probe passed into the tumour, which was evidently the fibrous shell of the ovary. Inflammation had emptied it of the softened ovarian stroma, and it was lined by thick pus. The colon, cœcum, and rectum were ulcerated.

Blennorrhagic ovaritis may occur alone, or it may co-exist with metritis. When the patient is mending, the pain first diminishes; next, the swelling; and the discharge becomes more considerable. Ricord and Pistocchi have drawn attention to the fact, that the suppression of the gonorrhœal dis-

charge sometimes coincides with the first development of ovaritis, as the inflammation of the testicle does with the suppression of gonorrhœa. If, in the healthy state, the Fallopian tubes are so clogged with tenacious mucus that capillary attraction is impossible, when they become chronically inflamed, their tunics are hypertrophied, and their canal enlarged, so that they may convey pus from the womb to the ovary; but I do not believe with Aran, that they can transmit a specific poison without being themselves suffering from blennorrhagic catarrh.

Catarrh of the neck of the womb produces engorgement of the uterus and sub-acute ovaritis, in the same way that inflammation of the duodenum gives rise to hepatitis, while that of the urethra causes that of the testicle. Extensive ulceration of the internal surface of the neck of the womb may give rise to ovaritis; and, without appealing to my own practice, I shall quote the example of intense inflammation of the neck of the womb which Mme. Boivin has depicted in her *Atlas*, and with which coincided an inflammation of the right ovary, and refer to the remarks of Columbat de l'Isere, Vol. II., p. 545, as well as to Madoosudun Goopta's statement, given at page 17 of this work.

Duparcque relates the following case:—

CASE 51.—A woman was married at twenty-five years of age, and soon afterwards the menstrual flow diminished, and was sometimes absent, while she experienced severe pain in the right ovarian region. The womb, and particularly the posterior lip of the os uteri, were congested and swollen. This state of things had existed for three years, when, in addition to the pain, a swelling was detected in the right ovarian region. The inflammatory congestion of the womb was removed by leeches applied to the neck of the uterus; but the ovarian tumour continued to increase, and became twice the size of a man's fist.

In relating the following case, Dr. Verney, of Lyons—*Gaz. des Hôpitaux*, July 8, 1852—aptly remarks, “that it might be well placed in a chapter on ovarian hemorrhage as an accident of menstruation.”

CASE 52.—September 2nd, 1849, Mme. — entered the Hôtel Dieu of Lyons. She was thirty-two years of age, first

menstruated at twelve, and continued regular, both before and after the birth of her only child. While menstruating fifteen months before, she was injured by a blow, and much frightened; the catamenia stopped, the patient was treated for metritis, and has always since suffered more or less acutely from abdominal pains, and a sanguineous discharge. The womb, on examination, was found hypertrophied and anteverted. No surgical treatment or injections were resorted to, but the constant sanguineous discharge was checked by general measures. There was, however, a profuse sanguineous flow at the successive menstrual periods, which occurred from the 20th to the 25th of July and of August. Flooding occurred on the 23rd of September. On the 25th, acute peritonitis supervened, and the patient died on the 27th. On opening the body, the usual appearances of acute peritonitis were found. The womb was chronically inflamed, and its cavity lined by a well-formed decidual membrane; but there was no ulceration, erosion, or fissure, to explain the constant loss of blood. The right ovary contained two small abscesses, the left was much hypertrophied, very vascular, and a blood-clot, the size of a horse-bean, formed hernia between the lips of the ruptured capsule of the ovary. Thus the consequence of the sudden suppression of the catamenia not having been carefully attended to, fifteen months' illness ensued, during which menstruation continued irregular, and the abdominal sufferings were kept up by ovarian inflammation, evidenced by the two abscesses in one ovary, and the vascularity and hypertrophy of the other. Then came the slight hemorrhage from the rent ovary, which was most likely the result of ovulation, and general peritonitis, the recent date of which was indicated, as much by the appearance of the blood-clot as by the characteristic symptoms. This is another instance of the interdependence of ovaritis and uterine hypertrophy. The treatment cannot be recommended, for there was no bleeding from the arm with a view of turning in another direction the blood current, flowing towards the pelvic organs, for the last eighteen months, no perception of the indication to bleed from the arm after the second flooding in August, which, in all probability, would have prevented the ovarian disease, and the fatal peritonitis which occurred at the following menstrual epoch.

Dr. Doherty states, that he has also met with chronic ovaritis supervening on malignant diseases of the womb. But it is principally in that peculiar form of catarrhal inflammation of the internal surface of the neck, when no ulceration can be detected, and where a diminished uterine orifice is plugged up with solid mucus, that the transmission of inflammation to the ovaries is most frequently observed.

This is a very tedious form of uterine disease, and after lasting some time a new state of suffering begins; deep-seated pain is felt in the ovarian region of one or both sides, which may be followed by a distinctly perceptible ovarian swelling. Dr. Melier was the first to draw particular attention to this succession of morbid phenomena—*Mémoires de l'Académie Royale de Médecine*, Vol. II. In a case he attended with Dr. Roche, the patient had, for a year, been afflicted with catarrh of the neck, accompanied by pain behind the pubis; when she began to experience a totally different kind of suffering in the iliac regions, and an ovarian swelling could be distinctly felt in the right iliac fossa. Whenever the pain in the cervix was exasperated, the ovarian tumour became likewise more painful, and on attempting to dilate the uterine orifice, the process caused the tumour to be more painful. Dr. Melier has observed several cases of this description, and I have seen some, in which so great a sympathy of feeling has existed between the two organs, that any increased inflammation of the womb produced increased inflammation of the ovary, and by healing the uterine surface, I have abated ovarian irritation. In a case of ovarian abscess lately published, “the only cause,” says Dr. Turner, “was the chronic inflammation and ulceration of the neck of the womb.” In proof of this position, I may record the case of a young lady affected with ulceration of the cervix uteri, and likewise a swelling of the ovary to triple its usual size. The disappearance of the tumour followed the cure of the inflammation of the cervix by cauterization with the actual cautery. In another case of uterine disease, which had caused the right ovary to attain to quadruple its usual size, Lisfranc amputated the neck of the womb, and six years afterwards the tumour had not increased. But why should I seek for instances out of the particular subject at

present in hand, since I often find symptoms of ovarian engorgement disappear from merely treating the uterine ulceration—a fact which is admitted by Dr. Bennet, who says, in p. 44 of his fourth edition, “The propagation of acute inflammation from the uterus to the lateral ligaments, so often occurs, that we shall hereafter see that it may be considered one of the natural terminations of acute metritis.” It is again admitted, “that the disease of the cervix may be the point of departure of the inflammatory action, which thence extends to the lateral ligaments;” and “that there is great danger of inflammation passing to the lateral ligaments, and giving rise to abscess.” If such be the case, if the transmission of inflammation be so frequent from one to the other, and the danger so great, I regret that Dr. Bennet did not give the result of his experience on this subject, for on referring to his chapters on the causes and terminations of metritis and of inflammation of the neck of the womb, I find that he has omitted to treat of ovarian inflammation, either as a cause or as an effect of uterine disease. Thus ovaritis is often an attendant on metritis; sometimes the two diseases co-exist, and then the former is masked by the symptoms of metritis. Gendrin explains the simultaneous inflammatory seizure of the womb and the broad ligaments, by the fact of nerves and arterial vessels ministering in common to the womb, the ovaries, and broad ligaments. If idiopathic inflammation of the womb produce ovaritis, it stands to reason that the same result may follow the use of injections, or of those active agents—instrumental interference—by which one seeks to substitute simple inflammatory action for an intractable morbid state, and that there may be therapeutical causes of diseases of the ovaries and of the womb.

INJECTIONS.

Styptic injections employed to stop flooding in the parturient woman, as well as stimulant injections into the cavity of the womb, have been known to produce ovaritis and other pelvic inflammations. Even vaginal injections should then be very carefully made, for the water entering the womb may cause metritis, and the extension of the inflammation to the neighbouring tissues. Mr. Fenoglia—*Rep. Med. del Piemonte*

—records a case of acute metritis produced by a vaginal injection of five drops of spirit of ammonia in five ounces of fluid; and Dr. Bennet says, “the two most severe instances of acute metritis that I have myself witnessed in the unimpregnated womb, occurred after the use of weak astringent vaginal solutions.” Uterine injections were strongly recommended by Vidal de Cassis, and also by Lisfranc and Ricord, to cure chronic uterine *catarrh*. Hourman first, and then Robert and Malgaigne, have shown how dangerous was this practice. Aran tried injections of nitrate of silver in the neck of the womb in twelve cases of chronic *catarrh*. Two of the patients recovered as speedily as when gleet is cured by a similar plan of treatment; none of the twelve died, but the accidents were too serious to warrant the treatment. Thus in some, as soon as a few drops of the solution had touched the uterine surface, and long before any of it could have passed through the Fallopian tubes to the peritoneum, intense pain, meteorismus, and peritonitis were experienced. Ten of the twelve had metro-peritonitis, four had ovaritis and inflammation of the broad ligaments, and these accidents cannot be said to depend entirely on the irritating nature of the fluid injected, for M. Leroy d’Etiolles has twice seen ovaritis caused by emollient injections into the womb. Aran told me that a young fellow-practitioner once asked him to see a case of uterine disease which had much perplexed him. A solution of nitrate of silver had been several times injected into the womb, causing intense pain, and a considerable loss of blood. On examination, Dr. Aran was struck by the livid tint of the vagina, and by the softening of the neck of the womb, which induced him to pronounce the patient pregnant, and time proved the correctness of his diagnosis. Thus the nitrate of silver injection probably entered the cavity of the womb, detached a portion of the placenta, but did not cause abortion. Such a tolerance cannot be expected, and it is evident from what precedes, that injections to the neck of the womb should be very cautiously used.

CAUSTICS TO THE NECK OF THE WOMB.

Gendrin has drawn particular attention to metro-ovaritis,

as a consequence of the too frequent cauterization of the neck of the womb, or of its being done in the acute stage of its inflammation. In a clinical lecture, after reminding the pupils of the case of a woman who died of peritonitis from the rupture of a large pelvic abscess, which was caused by two successive cauterizations with the acid nitrate of mercury during the acute period of inflammation of the neck of the womb, he adds: "This result of cauterization—metro-ovaritis—is evidently a common complaint, for many instances of it may be found, all the year round, in every clinical ward in Paris, and as this *may* follow cauterization when most judiciously performed, it behoves every practitioner to insist on the patient taking more than usual care of herself after its performance; it is important to watch for the first indications of metro-ovaritis, and not to repeat the application until there be no chance of rekindling the inflammation determined by the first application." Every fourth or fifth day, the nitrate of silver may be employed, but a longer space of time must elapse between the applications of nitrate of mercury and Vienna paste. I have occasionally been told by patients that they had been examined with the speculum once or even twice a day, and cauterized every day; this is not the practice I have learned from Recamier, from Lisfranc, Gendrin, and other eminent men. Aran mentioned three instances of acute peritonitis occurring as a consequence of the application of the actual cautery to the neck of the womb. Energetic cauterization may also indirectly cause the retention of the menstrual flow, and peritonitis by the occlusion of the uterus. This accident is, in general, the patient's fault; for if the ulcerated surface left by the falling of the eschar were gently touched with nitrate of silver every third or fourth day, adhesion would not take place. The practitioner should therefore warn the patient of the consequences of a neglect of treatment. Such cases have been published by Dr. Williams of Swansea, Dr. Bernutz, and by myself.

INSTRUMENTAL INTERFERENCE.

I have seen the application of five leeches to the neck of the womb bring on peritonitis, although a similar application had been frequently made before with great benefit. The

scarification of the neck of the womb, to relieve its congestion, has been known to cause fatal peritonitis, from the ovaries being already in a state of chronic inflammation. Such cases make one understand how scraping the internal surface of the womb with the uterine curette, and the use of the uterine sound, should likewise have caused peritonitis.

Contrary to the views entertained by Prof. Simpson, that when the uterine sound cannot freely pass the *os internum*, this is morbidly contracted, I believe that such is its normal state, except during menstruation or parturition, and that its relaxation, like that of the *os externum*, is usually indicative of inflammation. If this be true, the uterine sound, even in cautious hands, may do mischief. Thus an obstetric physician attached to one of our largest metropolitan hospitals, told me that he is afraid of it, having once by its use caused a pelvic abscess which required opening. A sensible practitioner will not infer from this, that Dr. Simpson's "bent wire" is an abomination, but that it must be used with tenderness, by experienced men, and only when absolutely necessary to establish some important point of diagnosis.

METROTOME.—Lisfranc—*Clin. Chy. de la Pitié*, Vol. II., p. 140—gives a case wherein the neck of the womb seemed as if pierced with a gimlet, so small was the opening of the *os uteri*. To remedy sterility in this case, he slit open the neck of the womb with a *lithotome caché*. Pr. Simpson has recommended the same operation for the same infirmity, with a similar instrument, called a *metrotome*. This, even in Edinburgh, is not unfrequently followed by very serious flooding; and the highly instructive case published by Dr. Oldham, in the *Guy's Hospital Reports*, shows how fatal may be the result of an operation, not even warranted by the nature of the disease; for the uterus was sound, while the ovaries and Fallopian tubes were evidently inflamed, one of the latter being obliterated.

If the patients recover from the operation without flooding, it is still generally useless, because the wound heals. Dr. Bennet has several times seen an almost impervious stricture of the *os uteri* in consequence of Pr. Simpson's operation, although performed by the latter; and I have shown that retention of the menstrual flow sometimes entails great

abdominal suffering, if not peritonitis. The metrotome should be discarded altogether, and stricture of the os externum should be treated by sponge tents; but if the womb is to be slit open, let the operator bear in mind a statement made by Huguier, "that where the upper third of the neck of the womb unites with the middle third, the neck is encircled by an artery as large as a crow-quill." It was the wounding of this artery which in Malgaigne's case caused the patient's death, as will be related. Recamier avoided wounding this artery, and lost little blood in his numerous operations, because he made a rule of finishing the division of the neck of the womb by tearing it.

STEM-PESSARIES.—"If all pessaries, of whatever form or shape, increased prolapsus uteri instead of relieving this infirmity, physicians, surgeons, and women would have long ago rejected them altogether." So says Morgagni—*Epis.* 45—with his usual sound sense. Singularly enough, Hippocrates has alone sought to combine quality and form by using as a pessary a pomegranate steeped in wine. A great many attempts have been made of late to devise other pessaries, but their inventors forget that many uterine deviations and flexions are *congenital*, as Morgagni and Jobert de Lamballe have well proved, and therefore beyond the pale of treatment, or else of so long standing that they cannot be permanently *redressed*; and that in the majority of cases they are perfectly *harmless*—a fact which has been lately brought into the strongest relief by Professor Paul Dubois and Hervez de Chegoin, while in other cases, as in two of Malgaigne, the deformity disappeared after a time—facts which have been received without contradiction in a very important discussion on uterine disease in the Académie Impériale de Médecine. Dr. Simpson has sought to remedy the ill effects of uterine deviations by introducing a metallic stem through the neck of the womb and into its cavity. This is useless under the contingencies just enumerated, and most dangerous if there be chronic inflammation lurking about the womb or ovaries, as in a case I shall soon relate.

Dr. Hervez de Chegoin asserts that retroversion of the womb, by its pressure on the ovaries, may irritate them; but Dr. Rigby has exaggerated the importance of this cause

of ovaritis, and in some of his own cases—*Med. Times*, Dec. 1, 1849—it was the use of the stem-pessary which, without curing the retroversion, prolonged ovarian and uterine irritation. Dr. Oldham in discussing this subject, says: “I have never met with a single instance of this description, and I think the opinion is made to square with Dr. Rigby’s views of the advantage of mechanical relief in these cases.”

The metallic stem-pessary is tolerated by some women, and when in Edinburgh, in 1850, Dr. Simpson showed me a patient, who assured me she had worn this instrument with comfort for three years. Dr. Simpson says that, in Edinburgh, except in some extremely rare cases, the instrument does not determine any bad symptom, but that, on the contrary, it relieves those sufferings previously experienced by the patient: unfortunately, this does not agree with medical experience in London, France, Germany, and America. Many obstetric physicians of eminence with whom I have conversed on the subject, believe the use of the stem-pessary to be dangerous, and think that if it were well borne in Edinburgh, it must have been placed in the neck of the womb without entering its cavity; but, from the length of the stem in those cases for which I saw Dr. Simpson apply the instrument, this cannot be correct. Mr. Bransby Cooper has met with a fatal result of the use of the stem-pessary, which will be found in another page; and the dangers of its use are confirmed by Dr. Ritchie’s statements in his article on General Diseases—*Edin. Med. and Surgical Journal*, January 1, 1851: “In regard to the gross impropriety of retaining metallic substances within the uterus, I have a strong opinion. I do not doubt that in the patient whose case I have detailed, serious mechanical injury was inflicted on the uterus by the galvanic bougie, and that had it been longer retained the consequences would have been still more fatal. I was requested one Saturday evening, about a couple of years since, to visit a lady at thirty miles’ distance for the purpose of removing from her a metallic stalk-pessary, introduced for the cure of an alleged retroversion of her uterus. There being no conveyance to the place on the following day, I did not see her till the Monday, when the agony created

by the instrument having become insupportable, she had overcome her fears and got her husband to extract it. I found her labouring under violent hysterical symptoms, much tenderness of the abdomen, and having the genital passage so altered by inflammation that the os uteri could not be recognised. After this, her confinement to bed was protracted, she ceased to menstruate, and as she had never had a child, a hope began to be entertained by her friends that she had got a compensation for her sufferings by having become pregnant. Dr. James Wilson, from Glasgow, was requested to see her, with the view of settling this point. He ascertained that the uterus was unimpregnated, but that its orifice was obliterated. Soon afterwards, this latter burst and gave exit to a quantity of pus, and in a few months more, her situation not having materially improved, she removed to Glasgow to be under my care. On examining the uterus, I found that it occupied the axis of the cavity of the pelvis, but that it had become immovable from the matting and consolidation of its peritoneal surface with the pelvic viscera. A succession of suppurations from the uterus occurred while she remained in Glasgow, and it was not till after many months that she was able to go out of doors, and at this moment she continues an invalid. The subject does not require further comment." In another case, the stem-pessary determined so much pain, that it was withdrawn, and on examining the lady three weeks after, "I found the os uteri converted into a gaping circular opening of the shape of the cupro-zinc stalk; and the labia, for about an inch all round, occupied by an opaque spot, not unlike that which the application of lunar caustic occasions in the same situation."

Having considered the subject at so great a length, I need only conclude with the observation of a reviewer on Mr. Bransby Cooper's case, "that it is scarcely consistent with right principle to seek a doubtful good by means which have been proved to be fatally dangerous even in well-skilled hands;" and with the remarks of John Clarke, "that it would have been better for mankind if the disease had not been known," because, "to remedy a state often unattended by any bad consequences, violent attempts have been made,

but with the risk of doing considerable mischief to the uterus."

MAMMARY IRRITATION.—The sudden suppression of the lacteal secretion was formerly considered the only cause of puerperal ovaritis. If it be absurd to state, with Guillemeau, Mauriceau, or Puzos, that in puerperal collections it is the milk secreted in the mammary glands which is deposited in the broad ligaments, it seems to me equally wrong to shut one's eyes to the fact, that sometimes when a patient is doing well, the sudden suppression of the mammary secretion from cold, or from other causes, is followed by the immediate development of tumours in the broad ligaments. What is known of the intimate sympathetic connexion existing between the ovaries and the breasts enables one to understand how the suddenly suppressed action of the mammary glands should excite the ovaries. "*Mulieri si velis menstrua sistera, cucurbitula quam maximam ad mammas appone.*"—*Hippocrates*, Aphor. 1, Sect. V. Do we not see similar reactions between organs bound together by less intimate ties of connexion? Are not the sudden suppressions of cutaneous eruptions frequently followed by some internal inflammation? The sudden suppression of the lochial discharge from the imprudent application of cold is likewise sometimes followed by metritis or ovaritis. Moreover, Grisolle and Marchal de Calvi say that women who do not suckle are more subject to pelvic abscess, and the first affirms that he never observed an iliac abscess in a woman who was nursing.

COLD, EMOTIONAL SHOCKS, &c.—The action of these agents in producing ovaritis is more difficult to understand, but it is generally by suppressing menstruation that inflammation is induced; by violent perturbations, mental or moral, sudden joy, grief or anger, connexion, drastic medicines, taking blood from the arm, or, what is a still more powerful and frequent cause, cold. Dr. Oldham mentioned to me that, having ordered cold water to be injected per rectum, to stop flooding, acute ovaritis suddenly supervened. I have met with a similar case, and it can be well understood, since painful colics and prodromata of peritonitis have sometimes followed the use of a speculum when cold. But, besides this

manifest action of *cold*, it has an indirect one, already remarked by Galen—that when the Roman women constantly drank very cold water, or melted snow, menstruation was either much diminished or suppressed. It is very singular that if an ice be taken during menstruation, if wet underclothes or wet shoes be retained for a few hours, or even if the hands be dipped in cold water, the flow may be stopped, the ovary or womb be congested, and inflammation produced, yet such may sometimes be the case. That the protection of the feet from damp is a point of great importance, few will dispute; but what I consider of still more consequence, in a fitful climate, is effectually to protect the pelvic organs by drawers, so that the patients may be somewhat independent of our piercing easterly wind, of our cold, clammy atmosphere, and of all those sudden transitions of our own or of nature's making. I dwell on a point which may seem of little importance, because B. de Boismont and Ricord are likewise firmly convinced, that by the use of drawers the number and intensity of the diseases of menstruation may be greatly diminished. Now that steel petticoats allow the free circulation of air underneath their ample circles, drawers and warm under-clothing are more than ever necessary. Dr. Handyside, who has been for thirty years in practice at St. Petersburg, writes to me that, in women of the higher classes, the menstrual flow is always much deranged during the winter. Dr. Ferguson, colonial surgeon to the Swan River settlement, and Dr. Alleyne, formerly colonial surgeon at Demerara, state that painful disorders of menstruation are most frequent during the cold and rainy season. Dr. Hannover, of Copenhagen, has shown that, while the use of Russian or tepid baths during menstruation would leave the flow unchanged in one case, it would make it shorter, weaker, and irregular in six. Whether the action of cold be direct or indirect, its influence in checking the flow, and thereby sometimes causing inflammatory affections of the reproductive organs, cannot be understood, except by supposing that the ovarian nîsus is interrupted by a sudden shock applied to the ganglionic nervous centre, by which the menstrual flow is impelled, except in rare instances, such as that of the notorious Teroenne de Mericourt, who, winter and summer, would, with naked feet, pace the

stone floor of her cell, which she night and morning deluged with cold water. In winter she would break the ice to get at the water; and yet, though she continued this kind of life for ten years, Esquirol says, that during the whole time the menstrual flow was regular. But if, in insanity, the functions chiefly depending on the ganglionic nervous system are steeled against the action of perturbing influences, in other states, the suspension of the *impending* flow is sometimes followed by sub-acute ovaritis, accompanied by dysmenorrhœa and hysterical symptoms. When, on the other hand, they operate *during* the menstrual flow, the sub-acute ovaritis they may produce is often attended by engorgement of the uterus, which is accounted for by the active congestion of its tissues, and the retention of blood in its cavity.

According to some authors, suppression of menstruation gives rise to ovaritis in those who have not borne children, and to metritis in those who have. The retention and suppression of the menses has a twofold influence in the production of ovaritis, and I may also add, disease of the pelvic organs in general, as will hereafter be shown: by the retention of what was to have been excreted, and the consequent congestion of the organs which secrete the menstrual discharge, and by the interference with the ovarian function, and the subsequent oppression of the system by some reflected influence of a nervous kind. For how can it be supposed that sudden death, in the midst of alarming convulsions and delirium, could be solely produced by the retention of a few ounces of blood: or, if such an explanation could be admitted, how can we explain those cases given at page 110, wherein the same symptoms have been brought on by the suspension of the *impending* menstrual flow?—Morgagni, *Litt. Anal. Med.*, 1845; Rullier, *Dis. Inaugurale*, Paris; Whitehead, *London Medical Gazette*, April, 1848.

MEDICINAL AGENTS.

Formerly in England, as now in India, stimulants, such as aloes, myrrh, castor, and asafœtida, used to be given to increase the flow of the lochia. This bad practice has been abandoned, and that of giving emmenagogues to promote menstruation has become more and more circumscribed,

since the better knowledge of treating those morbid conditions which check, in general, the menstrual flow. I have not seen a case to warrant the statement of Siebold, that abortive remedies had a decided influence on the production of ovarian disease. The mention of such an opinion, or the suggestion that such remedies as ovarian specifics might possibly exist, would, a few years since, have been treated as absurd; but, after the light which has now been thrown on ovarian physiology, it is worth while inquiring whether or not the action of ergot of rye, savine, or cantharides, is solely confined to the uterus, or whether such medicaments do not primarily influence the ovaries, which, by reacting on the uterus, incite its contractions? It appears that women who manufacture india-rubber goods, and are obliged to pass many hours a day in the fumes of camphor and turpentine, suffer much, during the first three months of their employment, from dysmenorrhœa and menorrhagia, and occasionally from ovaritis.

Such is the result of my own experience, combined with that of others, but if I merely take into consideration cases of which I have lately kept notes, I find that, with regard to the predisposing causes, fourteen out of fifteen had brown, red, or auburn hair, with hazel or grey eyes, and only one light hair; that only two were above thirty years of age, and ten had not attained twenty-five; that eight were of a sanguine constitution; in ten menstruation was habitually irregular or remittent; and in eight the disease began during the time of menstruation, or a little before or after it. With respect to the determining causes, cold produced it in three cases, marriage in two, abortion in one, in one over-fatigue in going up and down stairs, but in seven no cause could be detected.

CHAPTER XXVI.

The same morbid lesions determine different symptoms in accordance with the constitutional peculiarities of patients.

SYMPTOMS OF SUB-ACUTE OVARITIS.

ON considering the physiological conditions of menstruation, and inquiring into the symptoms by which it is attended, I find that in some women this species of parturition is productive of no more pain than is the act of oviposition in the fish. Generally speaking, however, it is preceded and accompanied by certain phenomena, which present the diminished but faithful portraiture of what has been called uterine disturbance—sense of fulness in the pelvic region, pains in the loins and in the ovaries, pains of an expulsive character, and therefore well termed bearing-down, for they typify the labour-like pains of a similar nature, by which a fœtus may one day be expelled. These do not depend on any mechanical pressure, but are merely nervous, and owe their existence to the communications which have been shown to exist between the hypogastric, uterine, and spinal nerves distributed to the surrounding pelvic viscera, and are often accompanied by heat and swelling of the organs of generation, by cephalalgia, plenitude of the pulse, and other signs of fever. These pains are often extraordinarily aggravated; and when this is the case, it may be inferred that the ovarian or uterine excitement is passing from the physiological to the pathological type. This inference is confirmed by an increase of heat, sometimes remarked over the site of the ovary, when examining with the hand, or by the finger, during a vaginal exploration. Morbid menstruation, with its attendant uterine symptoms, having once taken place, there will be a tendency to its repetition at each succeeding period; thus giving pertinacity to a disease which, in any other organ, would cease by degrees. I shall

first give the symptoms which are *common* to ovaritis under all its forms, and afterwards sketch the peculiar phenomena by which the local disease itself is often so masked as to cause it to be neglected.

PAIN.—This is nature's cry for help, being often felt more in the containing walls of the cavity than in the diseased organ itself. It is so with diseases of the generative apparatus, the sufferings of which are communicated by the hypogastric to the lumbo-abdominal nerves, which give sensation to the abdominal walls, and which remain painful until the disease be cured. Disease of the ovario-uterine apparatus is, therefore, indicated by lumbo-abdominal neuralgia, characterized by distinct foci of pain. Valleix, however, who has thrown so much light on the study of nervous affections, admits, with Dr. Beau, that in some cases of uterine disease there are acute pains in the sacral and ovarian regions, without any distinct foci of pain; and the converse is equally true. Whenever there exists lumbo-abdominal neuralgia, morbid menstruation, ovarian or uterine disease, may be predicated; thus, in all the cases of lumbo-abdominal neuralgia cited in Valleix's work, there was some amount of uterine disease. Beau confirms this statement, and adds, that the occurrence of lumbo-abdominal neuralgia has, in several instances, enabled him to foretel the reappearance of menstruation in chlorotic patients. Pain being thus a symptom common to many diseases, I must see if that of ovaritis has anything specific. The patient experiences a dull pain in the ovarian region, often imperceptible when she is in a state of repose, but brought on by walking, riding, by any sudden movement, or even by pressure on the side. The pain is also increased by straightening the thigh upon the pelvis, as in the erect posture, by which the integuments are put upon the stretch, and pressure is thus exerted over the part. Some patients are unable to maintain the erect posture without resting the foot of the side affected on a stool, so as to keep the thigh more or less bent upon the pelvis, whereby the integuments, &c., are relaxed. There is sometimes, in the earlier stages of the disease, a morbid sensation of numbness or of pricking in the corresponding limb. Again, to protect the ovary from external pressure, the patient often assumes a peculiar posture when sitting. For instance,

if suffering from sub-acute inflammation of the left side, she will not sit home on the chair, but sideways on the left tuberosity of the ischium, with the body bent forward. With respect to the quality of the pain, it has been compared by some authors to that by which the testicle is affected. Dr. Rigby has dwelt on its sickening nature; Dr. Woolley of Brompton frequently noticed sickness as one of the symptoms of cases similar to those above described; and Dr. Laycock alluded to it long ago as a symptom frequent in this, as in all ovarian states, both physiological and morbid. The pain frequently radiates from the ovarian region, is felt across the loins, and descends towards the thighs and fundament. It is of a dull, dragging, throbbing, and sometimes of an overwhelming nature, and distinguished by the patient from other pains resembling colic, and which depend on uterine contractions, although both species may be experienced at the same time. It is not to be confounded with the lancinating pains of the acute stage of peritonitis, which may be occasionally superadded to the ovarian pain, so I do not agree with Scanzoni, that all the pain of ovaritis is peritoneal. The patient may submit to this pain for years, but should she find it so wearisome to mind and body as to be led to seek advice upon her case, she is frequently treated for uterine disease, which may co-exist. Should she be married, connexion awakens and renders more or less acute the pain I have described. Ocular inspection, and an attentive manual examination, however, will often prove that the womb is not tender when touched, or that it does not present any appearance of disease. In sub-acute ovaritis, the hands placed on the iliac regions can sometimes detect an increase of heat; but these symptoms of ovarian inflammation are overlooked, or attributed to disease of the womb, inflammation of its neck, or to that scapegoat of uterine pathologists in England, irritable uterus, which has many of the symptoms of sub-acute ovaritis;—indeed, Dr. Ingleby noticed that the descent of the ovaries on the vagina produced in one of his patients all the symptoms of the disease called irritable uterus. This ovarian pain may last with little intermission for months; it has lasted for years in a case in which ovaritis had been diagnosed by several other authorities. I have seen pain and swelling of the side coincide with pain and

swelling of the corresponding ovary, and this has sometimes aided me to a diagnosis. Should, however, medical advice be asked in cases of sterility, or when tenesmus, a desire of passing water, or an inability to do so, alarm the patient—or when the bearing-down pains and impossibility to pass the fæces cause the medical attendant to fear stricture of the rectum, then I have sometimes discovered by a vaginal exploration, an increase of heat in the upper portion of that passage; but unless the ovaries be considerably swollen, their increase of dimensions may not be detected by this mode of investigation. It may, however, afford an indirect intimation of diseased ovarian action: thus, if one of the ovaries be inflamed, the patient's sufferings are greatly increased by forcibly inclining the neck of the uterus towards it, so as to direct the fundus uteri to the opposite side. The exasperation of her sufferings is then caused by the stretching of the inflamed broad ligament. If both ovaries be inflamed, slight lateral movements, communicated to the uterus by its neck, will greatly increase the pain felt in the ovarian regions. More direct evidence may, however, be obtained by a rectal exploration, for then the finger can often reach the ovaries, which generally, when inflamed, descend lower into the pelvis, are from twice to three times their original size, and are more or less painful on pressure, supposing a shallow pelvis permit their being attained, which is not the case when these organs are in their healthy state.

The greatest suffering is produced by the descent of the ovarian swelling, of about the size of a small apple, into the recto-vaginal cul-de-sac, thus impeding defæcation, or bearing down the uterus, so as to produce its complete retroversion. Such cases have been noted by Boivin, Denman, and M'Intosh. To admit, with Dr. Rigby, that a difference of symptoms depends on whether the anterior or posterior half of the ovary be the seat of the affection—the symptoms of derangement of the bladder being chiefly observed in the former, and those of the rectum in the latter case—seems to me quite impossible; and I object most emphatically to his describing, as cases of displacement of the ovary, those wherein the displacement is caused by inflammation. In a case related under this name—*Medical Times*, July 6, 1850—

the patient laboured under the peculiar sickening and intolerable pain which sometimes accompanies ovaritis, resembling the intense and peculiar suffering which patients describe when suffering from orchitis. This pain was attended with great throbbing, with a painful sense of forcing or distension of the tender part. The ovary had descended, had increased in size, was softer than usual, and painful when touched, either through the rectum or the vagina, or by the pressure of the neck of the womb against it. There was a dread of passing fæces, and great pain on doing so. All these are symptoms of sub-acute ovaritis, if such a disease exist; then why call it by a name which merely recalls a secondary effect of the disease? The patient was relieved by blood-letting. She had, it appears, no affection of the neck of the womb, and the offensive aqueous discharge which is noted does not seem to require any other explanation than the morbid stimulus of ovaritis upon the mucous membrane of the body of the womb.

General symptoms are often absent, but in the more acute cases the local signs of inflammation are accompanied by slight fever at night, thirst, a furred tongue, nausea, and sickness. The well-known sympathies which, without anatomical connexion, so strongly unite the breasts to the ovario-uterine organs, lead us to expect that ovarian as well as uterine disease would render them painful. Prof. Pistocchi has noted breast symptoms in two, and I have done so in six instances. The pain and swelling coincided with the side affected, or existed in both breasts when both were affected.

Nymphomania may be a symptom of ovaritis, as it is of uterine disease, and the statement is supported by Copland, Carus, Mende, Lowenhardt, Mme. Boivin, and Bertrandi, a disciple of Valisnieri, who believed that *furor uterinus* is the result of the too rapid development of ovarian vesicles, or of there being too many of them formed at once.

In Hufeland's case of nymphomania, occurring at the age of seventy in a very virtuous lady, nothing was found on examining the body but a scirrhus state of one of the ovaries. I know of a case of frantic nymphomania which was caused by ovario-uterine disease. It abated after profuse menorrhagia, and was cured by local treatment and by

marriage. A reviewer in the *British and Foreign Quarterly* mentions the case of an aged female who exhibited intense sexual passion, during the prevalence of which she died, and "one ovary was found inflamed and evidently four times as large as its fellow." Most of these cases, however, are given without sufficient detail, for it is not mentioned whether the external organs of generation, and the vicinity of the organ of genital gratification—the clitoris—were examined. One of Prof. Pistocchi's patients was an inveterate onanist from childhood, many years before the appearance of ovarian symptoms. In most of the cases that have come within my own observation, far from giving rise to nymphomania, the disease, on the contrary, has had the effect of deadening all sexual feeling; and when ovaritis is more acute, the pain by which it is accompanied is of too alarming a nature to permit of sexual intercourse with anything but repugnance. In one of the most aggravated cases of spurious pregnancy which has fallen under Prof. Simpson's notice, ovaritis was evident, and the ovary subsequently suppurated.

I have hitherto given a general description of the symptoms of sub-acute ovaritis, as observed by others and myself, but the following is the succinct result of the symptoms observed in cases of which I have lately kept the notes.

Out of sixteen cases I constantly found pain in one or both ovarian regions. The pain being fixed, but sometimes subject to irregular exacerbations, being increased by pressure, by going up and down stairs, by a false step, or by anything that could jar the corresponding limb. It is well to notice that pressure on the ovarian regions did not generally determine pain in the course of the lumbo-abdominal nerves. In three cases out of fifteen, the pain was accompanied by an amount of abdominal swelling discernible to the eye, obscurely felt on pressure on the abdomen, better appreciated by a vaginal examination, and which might have been made certain if a rectal examination had been deemed requisite. In six cases there was considerable pain and swelling of the breast corresponding to the side affected, and of both when both sides were diseased. This symptom was most marked in a case which did not occur at a menstrual epoch. In five cases there were hysterical symptoms; in two there was numb-

ness and pain in the corresponding limb; in five there was slight fever; and with regard to the duration of the disease, it varied from seventeen days to several years, the average being two or three months.

TYPES OF OVARIAN INFLAMMATION.

The same morbid lesions are attended with different accessory symptoms in different women, according as they react on a womb more or less inflammable, on a nervous system differently prone to respond to irritation, or on fluids more or less vitiated by the unknown causes of scrofula, &c.

If the ovaries are the principal organs of menstruation, their morbid conditions must influence the menstrual function either by their own power or by their influence over the womb. It will be seen that one is just as much entitled to ascribe diseases of menstruation to the ovaries, as physiologists are to ascribe menstruation to them as their function. It is well to observe so far, because, in our classic works on diseases of women, the influence of the *principal organs of menstruation* in producing diseases of menstruation is ignored, and they are almost always ascribed to constitutional peculiarities by some, or by others to inflammation of the neck of the womb. In supposing that inflammation, when acting on the ovaries, is capable of *sometimes* determining the diseases of menstruation, I am confirmed by a reviewer, who observes, that "amenorrhœa, dysmenorrhœa, menorrhagia, are more intelligible as the effects of pre-existing inflammation than as the derangements of a function," and the types of ovarian inflammation which were established in my first edition have been assented to by all the authorities by which it was criticized; and with respect to the relative frequency of these types, I concur with a reviewer, that the menorrhagic type is the most frequent, that the dysmenorrhœic comes next, and that the amenorrhœic is the least common of all.

AMENORRHŒAL TYPE.

Chlorosis generally depends on a deficient reaction of the *ovarian nisus* on the system. This deficiency of action seems to arise from some latent organic imperfection in the ovaries, or on their peculiar power being lessened by the combined

agencies of an injudicious hygiene. The ovaries have been found atrophied in those who had long suffered from chronic ovaritis, and in whom menstruation had been absent.

But all the authors who have studied chlorosis admit, with Frank, Wendt, Andral, and others, what they call chlorosis *florida*, *sthenica*, or *chlorosis fortiarum*. Cullen, Broussais, B. de Boismont, and myself, have seen chlorosis supervene in the midst of perfect health in consequence of the sudden suppression of menstruation, accompanied by phenomena which led us to admit a high state of ovarian engorgement. Sub-acute ovaritis produced in these cases what an arrest of development produced in others; and the functions of nutrition, deprived of that stimulus which they derived from the sexual organs, languished, and were supported by tonics and steel; whilst the ovarian turgescence which occurred, required to be treated by leeches, blisters, and the other measures recommended. Alluding, no doubt, to similar cases, Dr. Copland says—*Dict.*, p. 841—"The ovaria may be so changed by inflammation as to be incapable of exciting the vascular activity of the uterus, so as to produce the menstrual discharge; but these changes are rather inferred from the history of former disorders than manifested by existing phenomena." Dr. Martin Duncan—*Provin. Med. and Surg. Jour.*, Oct., 1849—has expressed views so similar to mine, that I am pleased to make use of his words:—"The propriety of attending seriously to the symptoms of congestion of one or of both ovaries, as rendered evident by thrilling pain a little above the centre of Poupart's ligament, accompanied by tenderness on pressure, and increased by the erect posture, ought to be strongly insisted upon. Whether the pain be constant or intermittent, returning at, or exacerbated during the monthly crisis, accompanied by menorrhagia, or coexisting with amenorrhœa and chlorosis, it should receive our urgent consideration; for when an organ has been congested for any length of time, such a state is difficult of eradication—morbid changes rapidly occur, and irremediable mischief results. Theoretical as well as practical data lead us to suppose that ovarian disease may be prevented by the timely exhibition of constitutional remedies and local applications."

MENORRHAGIC TYPE.

In profuse as in suppressed menstruation the ovaries are often the principal organs affected; the womb suffers, no doubt, and I have shown in the second part of this work that chronic ovaritis frequently induces internal metritis.

It is impossible to say why certain cases of sub-acute ovaritis should be attended by scanty menstruation, while in others it is accompanied by its profuse flow; but that the same cause should produce different effects, according as it is modified by other circumstances, is a truism. Menorrhagia has been met with, generally speaking, in women of an irritable, nervous constitution. Mr. Elkington, Chereau, and others, have exemplified this type. Dr. Martin Duncan informs me that he frequently meets with it. I have found such cases very tedious and obstinate, until the ovarian disease was cured. Such cases had not escaped the attention of other observers. Lisfranc—*Clin. Chyr.*, Vol. II. p. 353—gives a case in which chronic inflammation of the right ovary kept up for two years passive menorrhagia: many hæmostatic remedies were uselessly given, but the flow diminished under the influence of steel. Letellier, in his thesis on metrorrhagia, has noted that it was ascribed to ovaritis in four out of eighty-two instances; and B. de Boismont even goes so far as to establish as a rule that chronic ovarian inflammation generally causes chronic menorrhagia. A case in point was published by Dr. Rigby—*Med. Times*, 15th Feb., 1845:—

CASE 53.—“Ever since the first commencement of menstruation, Mrs. L. has suffered from severe dysmenorrhœa, produced by a long closed state of the os uteri; the result of which, at these periods, has been accumulation of menstrual fluid in the uterus, which was only able to expel it after severe and painful contractions. For nearly thirty years of her life has this source of suffering and severe uterine irritation continued, until the left ovary has ultimately become inflamed and enlarged. It has thus formed a considerable mass, pressing upon the uterus and rectum, and thereby obstructing a free return of blood from these organs; the consequence of which has been menorrhagia to a most severe extent for the last few years, seriously breaking up the general health.

There are no traces of uterine disease. By the use of antimonial ointment to the left groin, and by leeches to that part of the rectum against which the swollen ovary projects, I have succeeded in diminishing the lancinating pains in the left groin, the sense of distension and pressure in the pelvis, particularly upon the rectum, and the profuseness of the menstrual discharge, the last appearance of which was *without coagula*. The ovary, as felt *per rectum*, is less painful, softer, smaller, and less throbbing. Previously to the last menstrual period, I gently dilated the os uteri, in order to facilitate the discharge of the catamenia. The system is very irritable: slight opiates and purgatives are apt to produce over-effects. My practice has been simply to regulate and improve the general health, and to keep up a gentle action by antimonial ointment upon the left side. Within the last few weeks I have had again an opportunity of seeing my patient, during a short visit to London. Her appearance is remarkably altered for the better. She has grown robust, has a good colour, is able to take active exercise, and is enjoying a state of health to which, for a large portion of her life, she had been an entire stranger. She has lost all former symptoms, even the pain in the left hypogastrium. There has been no return of menorrhagia."

DYSMENORRHŒAL TYPE.

The frequent dependence of painful menstruation on sub-acute ovaritis has been admitted by Drs. Oldham, Ashwell, Coley, and others too numerous to recount. In addition to the symptoms before described, the intensity of the pain becomes most distressing, and it frequently commences several days before the impeded menstrual flow, showing that the pain does not depend on its arrest, but on the menstrual process taking place while the ovaries were subject to morbid action. This assertion is confirmed by Dr. Ashwell, who says:—"Dull and heavy pains in the region of the ovaries, lasting for months, are the consequence of their chronic inflammation. I mention the circumstance, because they are too often regarded as neuralgic, and treated accordingly, painful menstruation and sterility being their results. If any constitution is more liable than another to this termina-

tion, it is also the lymphatic, or that which coincides with a marked predisposition to scrofula." The action of sub-acute ovaritis in the production of dysmenorrhœa is threefold.

1. Sub-acute ovaritis may of itself produce dysmenorrhœa, as a simple result of the process of morbid ovulation, and not by the agency of any appreciable inflammation of the womb, or of its neck, and without any appearance of false membrane in the catamenia.

2. Sub-acute ovaritis, if long continued, causes chronic inflammation of the womb, internal metritis, and thereby dysmenorrhœa, although no membranes are detached from the womb. Following in my wake, Aran asserts that he has never met with a case of chronic ovaritis which was not associated with internal metritis.

3. Ovaritis, as Dr. Oldham has well shown, often causes dysmenorrhœa by determining hypertrophy of the uterus, with exfoliation of its mucous membranes, of which I have already treated.

Dr. Bennet asserts that "nearly all the cases of dysmenorrhœa in the unmarried female which have come under my notice, have proved to depend upon inflammation and ulceration of the neck of the womb." That inflammation of the neck of the womb is found in most cases of confirmed dysmenorrhœa is true, but one must not lose sight of its pre-existing causes, such as internal metritis and ovaritis.

HYSTERICAL TYPE.

Having seen how frequently hysteria is caused by functional disorders of the ovario-uterine organs, or by their undue influence over a female organism wherein the nervous and sanguineous systems are not properly balanced, it remains to be shown that hysteria is frequently a symptom of inflammatory affections of the ovario-uterine apparatus. Out of sixty-seven cases of hysteria wherein a post-mortem examination was made, says Landouzy, morbid lesions of the genital organs were found in fifty-five; and those who see much of disease in women, know well that when inflammatory affections of the neck of the womb, or sub-acute ovaritis, are cured, in the majority of cases hysterical symptoms suddenly cease. To impress this conviction on the minds of those

beginning practice, I shall adduce other testimony in support of my assertion.

Given a nervous, irritable disposition, and the laborious elaboration and elimination of the first ovule, or the frequent morbid repetition of the same function, the delay or the denial of the proper ovarian stimulus, and sometimes even its enjoyment—and it will be often found that hysteria is either dependent on sub-acute ovaritis, or on ovarian irritation determined by some uterine lesion.

This theory of hysteria was first professed by Hippocrates; for in referring the disease to the womb, he referred to the generative organs of woman as they were then known. A more perfect knowledge of the physiology of generation has shown that these symptoms cannot be altogether attributed to the uterus. The older writers, Binniger, Bonnet, Lieutaud, Riolan, Morgagni, Rivière, and Vesalius, have noticed morbid lesions of the ovaria in those who were much afflicted with hysteria, or who died after unsatisfied desires, whose ovaria were found more voluminous, and infiltrated with a sero-viscous matter, termed by them spermatic, on account of the physiological opinions then current respecting the testes muliebrum, as they were then called. Rullier and Mr. Whitehead have each of them particularly described the swollen, congested state of the ovaries in cases where patients were rapidly carried off by hysterical apoplexy; and Négrier asserts that hysterical symptoms have been observed in all whose ovaries, on post-mortem examination, were found distended and injected. He even supposes that the over-distension of the membranous envelope of the ovaria, and the compression of their nerves, might, by reacting on the adjoining nervous plexus, produce the symptoms of hysteria. This is perhaps taking too mechanical a view of the disease; but one cannot help remarking that something analogous has been observed, in man, by Lallemand, Ricord, and Deville, in those cases of inflamed testicle wherein the rupture of the seminal vessels, by tubercles or pus, gave rise to delirium. I am able to support these views by the authority of Frank, Copland, and Columbat, who admit that there is a relation of cause and effect between certain mild forms of ovaritis and hysteria; and lately Mr. Masfen of Manchester has published, in the

British Association Journal, several instances of the hysteric type of ovaritis.

Morgagni gives a good example of this type—*Epist.* 45 :—

CASE 54.—A prostitute, aged forty, was so nervous and hysterical that, on the slightest cause, she would tremble and faint. One morning she complained of feeling the womb moving about within her, of strangulation, and she suddenly died. Morgagni and Santorini opened the body before it was cold, and found no lesion to explain death. Whether or not the patient was at a menstrual epoch they could not ascertain, but on pressure blood transuded from the neck of the womb, which appeared inflamed. The Fallopian tubes contained white mucus, and their uterine extremities were obliterated, for, on insufflating them, the air did not pass into the womb. Both ovaries were hypertrophied, their cells were full of serum, and one was filled with pus. “I was particularly struck,” says Morgagni, “in examining the broad ligaments, by the elegant tracery of the nerves and vessels, and as these nerves were larger than I had ever before seen them, I said to Santorini, ‘There are the nerves and vessels which I have mentioned in the *Adversaria*, and which I have promised to describe at some later time.’” These nerves were larger than usual, because they had been often tormented by ovarian irritation, and, by acting on the brain and through these nerves, ovaritis caused hysteria. “You will perhaps say,” adds Morgagni, “that greater lesions of the womb and ovaries are often found in women who have not suffered from hysteria. True; but all morbid lesions do not produce the same symptoms, all nerves are not equally susceptible of morbid influences, all women do not, like the subject of these remarks, shake and tremble at the slightest cause.” On this point Dr. Meigs says: “I have met with many samples of very distressing pain and tenderness in the region of the organ connected with painful and hysterical menstruation; I therefore deemed I had good cause to suppose the ovaries were actually in a state fit to be called ovaritis.”

In an interesting case from the practice of Louis—*Gaz. Méd. de Paris*, 1846—hemiplegia had supervened on protracted hysteria; but, on making a post-mortem examination, the nervous centres were found without any lesions, but the

ovaries were swollen, lardaceous, covered with false membranes, the Fallopian tubes were inflamed and full of pus, a quart of which was found in the abdomen. The womb was healthy. In another case, published by Professor Piorry, death occurred suddenly, in the midst of an hysterical fit, during the course of intermittent fever; on post-mortem examination the brain was healthy, so was the womb, but both ovaria were double their usual size, studded with blood clots.

Hysteria may be a prominent symptom of acute ovaritis, as in the following case, related by Dr. Bright—*Lancet*, July 22, 1848:—

CASE 55.—“In May, 1847, I was consulted for a young unmarried person, aged nineteen, who had fallen downstairs a few days before—three days after menstruation. Of robust, well-developed frame, she was previously in the enjoyment of good health, with the exception of occasional hysterical attacks, and had been menstruating regularly for five years. After her fall she complained of great pain in the lower part of the back, and on the second day was seized with violent convulsive hysteria.

“I saw her on the third day, and found her in a semi-comatose state. The pulse was quick, the skin hot, the left side of the thorax and abdomen, and especially the lumbar region, were acutely sensitive to the touch. She had also frequently hysterical convulsions. Fearing some injury to the spine from the fall, I applied sixteen leeches to the lumbar region, which bled profusely. An active cathartic was administered, and the hysteria treated by large doses of opium. Under the influence of these means the hysterical symptoms rapidly gave way, leaving, however, great abdominal pain, especially on the left side; an evident swelling in the left ovarian region, where the pain was greatest, and a general febrile state. I suspected the possible existence of phlegmonous inflammatory disease of the lateral ligament; but not feeling warranted in proposing a digital examination, I merely persisted in general antiphlogistic measures, directing, however, the attention of both attendants and patient to the dejecta. On the tenth day, about four ounces of pus were voided along with a motion. On examining digitally,

I found at once *a small, indurated, painful tumour on the left side of the uterus*. She rallied rapidly, and soon became quite convalescent. At the next monthly period, however, she had a severe relapse, and notwithstanding leeches, cathartics, &c., matter again formed, and this time found a vent by the vagina. At the three following monthly periods she had relapses, although gradually less severe. When I saw her, many months afterwards, she was yet an invalid. On examination, no trace of the inflammatory tumour could be found, but there was still great local tenderness." This is an exceptional case, for it may be admitted, as a rule, that hysteria is a symptom of sub-acute ovaritis, of slight uterine lesions, or of the early stages in the development of chronic ovarian tumours, and that hysteria subsides when the ovarian affection becomes acute, uterine disorganization very extensive, and when ovarian tumours have greatly increased. Morgagni had already observed the subsidence of hysteria when uterine disease became acute.

It is to be deplored that it should be so strongly rooted in the professional mind, that hysteria is a purely nervous affection, natural to a highly educated woman. If, on the contrary, one were fully convinced that in the majority of cases hysteria is produced by organic or functional ovarian or uterine lesions, a radical cure would be more frequently the result of careful local treatment, in addition to empirical remedies, hygienic appliances, and moral influence. Others have repeated my assertions. Dr. Gaillard, of the Hôtel Dieu of Poitiers, says—*Gaz. Méd. de Paris*, 1854—"I see hysteria become worse, notwithstanding the cure of uterine disease, and I find an ovarian swelling to account for hysteria, and I cure it by applying topical remedies to the ovarian regions. I have observed hysteria in a woman who had ovaries and was without womb." I have noticed the amount of nervous irritability which often attends chronic ovaritis; and Aran has insisted on the point; estimating these nervous symptoms as the most distressing of all those of chronic ovaritis, he describes the nervous irritability, the emotional susceptibility, the neuralgic phenomena, and hysterical tendencies which are so frequently met with, although convulsive attacks are rare. Some

of these patients really for a time suffer from a mild form of insanity, so it is not more surprising to find insanity induced by morbid lesions of the generative organs, than to find psychical causes producing functional or organic lesions of the genital organs, of which I have given incontrovertible evidence. Dissecting the body of a young prostitute, who, after amenorrhœa had lasted four months, became an hysterical maniac, and died in general convulsions, Morgagni found nothing to explain these symptoms, but the ovaries were white, hard, scirrhus, larger than usual, and of their usual weight, lying behind the uterus, from the internal surface of which rose protuberances like warts; on being pressed, a white thick matter escaped.

On this point Dr. J. Conolly thus expresses himself in his Croonian Lectures:—"Bodily disease gives evident origin to mental delusions in many instances. Women of various ages, either at the monthly periods or on the cessation of the catamenia, and when labouring under some irritation or disease of the uterus or ovaries, are liable to imagine that an actual fire exists within them, that Satan has dominion over them, or that a deluge of flames is descending upon them. The mental symptoms ordinarily give way to treatment directed to assuage the bodily ailment. In one case, where an elderly patient had for some time attributed a fixed pain in the back to her having been seized there by the gripe of the devil, at one particular period of her life, the patient was fully relieved both from the pain and the demonomania by the application of several leeches to the seat of the pain. For reasons which may be readily imagined, an irritable condition of the uterus often leads to melancholy, to self-accusations, to religious despair, and to a suicidal propensity." In a patient who committed suicide on the last day of menstruation, Négrier found that the ovaries were from six to seven centimetres in length, and five in breadth. Dr. Davey assured me that out of 200 post-mortem examinations of insane women at Hanwell, of which he has taken notes, the uterus was seldom affected, while the ovaries generally presented signs of disease. This would, of course, require both explanation and confirmation; and I place it here as a hint to those who are now investigating the phenomena of insanity, observing, also, that

the assertion of Dr. Davey seems to derive confirmation from a statement made in one of the reports of the New York State Lunatic Asylum, that many patients are attacked with insanity after long-continued menorrhagia.

Such are the facts and deductions which make me believe, not that sub-acute ovaritis produces hysteria or insanity *per se*, but that, by a suggestive influence which it exerts over the cerebro-spinal system, it determines in some, hysteria or convulsions—in others, insanity; and I fully agree with the propositions appended by Dr. Lever to two cases illustrative of the preceding observations—*Guy's Hospital Reports*, 2nd Series, Vol. II.:—1. Mania, developing itself in the female, is sometimes associated with, and depends upon, organic disease and irritation of the sexual organs. 2. Unless remedial measures are applied to these diseased organs, the insanity will be permanent. 3. In most cases there is a diminution or suppression of the menses.

PUERPERAL SUB-ACUTE OVARITIS.

M. de Calvi and Dr. Bennet have not, I think, done wisely in considering idiopathic and puerperal ovaritis as distinct diseases. It is the same disease under different conditions of the fluids; one might as well treat separately of puerperal bronchitis or puerperal erysipelas. It has been objected that, in proposing a sub-acute variety of puerperal ovaritis, I have unduly sought to magnify the subject; but I believe Dr. Kennedy right in admitting, besides the acute pelvic tumours which may follow parturition, one which insidiously supervenes, often creeping on for days under a mild form, making it necessary to ascertain by repeated pressure on the abdomen of the recent mother whether inflammation menaces. Neither do I suppose that the ovary is the starting-point of morbid action in all pelvic abscesses, whether acute or subacute, but that it is so in some; and I am fully justified in so doing by the softened state of the ovaries at parturition, and the mechanical injuries they have been found to have suffered.

“Certainly,” says Dr. Meigs, “many of the cases of puerperal metritis and peritonitis commence with pain in the iliac regions, and when the case has proved fatal, dissection

has revealed greater ravages in the ovary than elsewhere, and it is by no means rare to find the organ filled with pus, or converted by the inflammation into a mass of softened tissue." The puerperal variety of sub-acute ovarian inflammation has been so well described by Dr. Doherty, in his able paper—*Dublin Journal*, Vol. XXII.—that I shall quote his words:—

"The affection to which I now beg to direct attention is stealthy in its nature, and usually makes its approaches so gradually, that for a long time the existence of any local malady may be unknown to the patient herself, who thus permits it to remain unheeded week after week, until it has perhaps laid the foundation of organic changes which it may ultimately be out of our power to remove. To this disease I have heard Dr. Kennedy, to whom I am indebted for my knowledge of it—for I have in vain sought in books its accurate delineation—give the name of secondary inflammation, by which he meant to imply the usually late period of its occurrence, and not that it must necessarily be preceded by a more acute or other morbid process. It is not my intention to deny that the local changes which I am about to detail may result from, or be, as it were, the remnant of, a more intense degree of inflammation; but the fact I wish to demonstrate is, that the appendages of the uterus are liable to become the seat of an inflammation, but feebly announced by symptoms from the very first, and occurring after the period during which the parturient female is usually considered obnoxious to such attacks. The history of these cases is generally as follows:—The patient has probably had an easy labour, and her progress has been so favourable, I have ceased my attendance; or if an hospital patient, she has been dismissed on the usual day, free from complaint. Convalescence proceeds uninterruptedly for some days, or even weeks; but after exposure to cold, she is seized with shivering, succeeded by hot skin and quick pulse, and a dull weight about the pelvis. After a few hours the feverishness disappears, and although some uneasiness still remains about the lower part of the abdomen, it is not sufficient to excite any apprehension in her mind, and thus a considerable space of time may pass over. Febrile paroxysms, however, recur at

intervals, and at length becoming more frequent, and stiffness and pain being felt on moving the leg of the affected side, she again applies for advice."

By a careful examination, the local disorders already described will be detected; but the ovarian congestion will be more considerable than in the idiopathic variety, and will be accompanied by considerable sero-purulent infiltration of the adjoining cellular tissue, and even of the vagina, which gives to the finger the sensation of a dense brawny substance, particularly in its anterior curve.

Although Krüger, Merat, Drs. Fleetwood Churchill and Copland, have written on rheumatic ovaritis, it is one of doubtful occurrence. It is said to occur, like rheumatism of the uterus, during the last months of gestation, during labour, and in the puerperal state, and to be caused by the action of cold air on the excessively expanded, and often unprotected parietes of the abdomen. In addition to the usual symptoms of the disease, there are sometimes violent paroxysms of pain and intense perspirations. The following case is given by Dr. Copland as one of rheumatic ovaritis, but Valleix remarks justly that nothing proves that it was so.

CASE 56.—"Mrs. P., of Walworth, was attacked, July 15, 1821, with excruciating rheumatic pains in the loins and limbs, increased on the slightest motion, or on attempting to turn in bed. She was in a profuse perspiration, and her pulse was full, strong, and about 100. She attributed the attack to sleeping in a damp bed when travelling. She was about twenty-six years of age, strong, plethoric, and of the sanguine temperament. The catamenia were usually very abundant, and seldom at longer intervals than fourteen days; their occurrence was soon expected. She had never been pregnant. About three days after the commencement of the rheumatic attack, and whilst I was attending her, she suddenly experienced an attack of acute pain in the hypogastrium, a little above each groin. Soon afterwards, two tumours could be distinctly felt in the regions of the ovaria. They were extremely painful, and tender upon pressure. The pains in the limbs were greatly abated, but pain was still complained of in the loins. All the inflammatory symptoms continued; the bowels were costive; the urine scanty, and high-coloured,

with frequent calls to micturition. The countenance was flushed, animated, and excited; the temper variable and hysterical. The treatment consisted of one bleeding from the arm, of repeated doses of calomel, ipecacuanha and opium combined, saline aperients being interposed, so as to keep the bowels freely open; of the application of a considerable number of leeches below each groin, and of the warm hip-bath. Four or five days after this attack commenced, the catamenia came on, and the pain, tenderness, and swelling gradually disappeared from the hypogastrium. This lady was some years afterwards the subject of abscess between the vagina and rectum, which opened into the latter. She subsequently was attacked by gout, and ultimately became consumptive from an excessive addiction to brandy, but was carried off by delirium tremens before the pulmonary disease had reached its utmost limits."

CHAPTER XXVII.

Sterility frequently depends on morbid conditions of the ovary.

MARCH AND TERMINATIONS OF SUB-ACUTE OVARITIS.

THE march of sub-acute ovaritis is essentially chronic, often extending over many years, during which there is always danger of its becoming acute and leading to a fatal termination. The study of the various ways in which sub-acute ovaritis causes sterility, will enable me to pass in review the principal morbid phenomena which chequer the march of this disease.

Physiologists now believe, with Meckel, that "the ovary is the workshop of generation." Pathologists will not deny that the cause of sterility is to be first sought in structural modifications of the ovarian tissue. Hufeland, Neumann, Mme. Boivin, and others, have arrived at the conclusion that "sterility generally depends upon a morbid state of the ovary, slowly and insidiously developed, and giving origin to other ovarian diseases." If such was the belief of men of great experience before the functions of the ovary had been made clear by modern physiologists, I may be permitted to condemn those who, blindly following the routine of olden time, seek for the cause of sterility in the womb alone, and consider themselves justified, for slight uterine lesions, sometimes the secondary effects of other affections, to treat the patient by means capable of endangering life, as in the following case published by Dr. Oldham—*Guy's Hospital Reports*, October, 1849:—

CASE 57.—"A lady came from Jamaica to London. She was quite well; but she had been told by her medical attendant in Jamaica that if she placed herself in the hands of some of the eminent London practitioners, her marriage might become fruitful. She did so; and a London obstetric

physician believing, with the Jamaica practitioner, that the opening of the womb was not sufficiently large, slit it up; after this operation the lady was condemned to wear, amidst atrocious sufferings, the uterine stem-pessary. Acute peritonitis was brought on, and the patient died. Dr. Golding Bird, who had been incidentally called in, gave the history of the case to Dr. Oldham, and requested him to open the body. Death was caused by acute peritonitis. The uterus had been opened by a single oblique division of the anterior wall, directed from the cervix to the left angle of the womb. The uterus was larger than usual for the virgin; it was rounded on its anterior surface, and there was a bulging convexity of the posterior wall, which, with the general softness of the tissue, showed it to have been the seat of recent engorgement. The blood-vessels over the entire surface of the uterus and appendages were injected with blood, especially the fimbriated extremity of the tubes, the ovaries, the broad and round ligaments. On the anterior surface of the body of the uterus were two small projecting fibrous tumours, the size of a large and small pea; the serous investment of them was highly vascular, the blood-vessels rising over them just like the calyx of the ovarian ovum of the bird. There was a similar more flattened growth in the posterior wall. The divided surface of the anterior wall showed its proper structure to be much enlarged (it measured in the body eight lines); the muscular structure was soft, and the veins large—a probe easily ran through them. The length of the united cavities was two inches ten lines, the canal of the cervix being one inch five lines. The mucous membrane of the cavity of the body was soft, slightly raised, and of a vermillion hue. Agitation in the water was sufficient to loosen and separate it. At the os uteri internum there was a zone of highly injected blood-vessels, broken only at one point; the circumference of this aperture was eight lines. The os externum had a clean, smooth edge, without any break or mark of division; its circumference measured one inch one line. The cervix had its characteristic markings, and the glands were empty of mucus. On the right side of the divided cervix, which would have formed the front wall, the ribbings were stretched upwards, enlarging the mesh-like

appearance, and towards the os internum some were lacerated transversely, and from this to the os externum the structure was more ragged than usual. *The right tube.*—The extremity of this tube was almost entirely closed as a congenital formation, the aperture being very small. When opened the fimbriated end showed its characteristic rich folds of mucous membrane, which were much injected, and were covered with bloody mucus. The remaining two-thirds of the tube were apparently healthy—not vascular, and pervious throughout. The right ovary, which was almost covered with lymph, was soft and large. There was a cyst, large enough to hold a small nut, on the uterine end of the ovary. The stroma was gorged with blood. There was only one puckered Graafian follicle; the surface of the ovary was thick and corrugated. The left ovary was irregular in its shape, a projecting mammillary portion coming out from its outer end. This, on being cut into, was hard and vascular, like the commencement of malignant disease; the ovarian tunic was thick and wrinkled, the stroma vascular, a few remains of Graafian vesicles, with puckered tunics, and some clots of different colours, black and brownish. The left tube vascular at its fimbriæ, healthy in its mucous membrane, and its canal pervious throughout. This tube passed into the uterus more directly than its fellow, which was more curved. The veins healthy, arteries healthy, the right round ligament large and vascular, vagina healthy. This case affords,” says Dr. Oldham, “a most instructive example of the dangerous effects of dilatation, even in experienced hands, and the great caution with which it should be undertaken. It shows, too, the difficulty of detecting the cause of sterility. I am sure there was no kind of morbid contraction, and that the os and cervix uteri, which were alone treated, had nothing whatever to do with the dysmenorrhœa or sterility, which was doubtless dependent on the atrophy of the ovary; and the congenital obliteration of the end of the right tube would have been sufficient to exclude the corresponding ovary from any share in the function of reproduction.”

How does sub-acute ovaritis produce sterility? 1, by promoting the imperfect development of ova, and by the retention of blighted ova; 2, by peritonitis, which impedes their

transmission from the ovaries to the uterus; 3, by inducing abortion; 4, by determining uterine inflammation.

1. I am sometimes consulted by delicate females, married for some years, who present all the *common* symptoms of sub-acute ovaritis, and in whom menstruation returns every three weeks, or even every fortnight, wherein the recovery from one menstrual epoch is almost immediately followed by the recommencement of the same process. In these cases sub-acute ovaritis may accelerate the development of imperfectly-developed ova, and cause the ovule to perish by *ovarian* abortion in the beginning of its career, in the same way that it might perish, at a later period of its existence, by *uterine* abortion.

The morbid conditions described as those of sub-acute ovaritis seem to be incompatible with the healthy secretion of ovules, and when this is coupled with the assertion of Pistocchi, "that several married women, who had borne children, ceased breeding after inflammation of both ovaries," and the statement of Richerand, that generally young women who complain of sterility have suffered from previous attacks of "*inflammation of the bowels*," the name under which ovarian and uterine affections used to be spoken of, I think it may be inferred that sterility may depend on the blighting of the ovula. Such is the interpretation proposed for the following case:—

CASE 58.—Dr. Vinen of Bayswater requested me to see a patient of his, in September, 1849. Mrs. L. was then twenty-eight years of age, with a pale complexion, middling stature, dark hair, and hazel eyes. She had first menstruated at twenty, but was always irregular both as to time and quantity, it being sometimes scanty, at others very profuse. Since marriage menstruation had become more regular, but was very variable in amount.

In the previous January she complained of acute pain in the right ovarian region. Two months after, Dr. Vinen was consulted, and he discovered a distinct swelling in that region, and, some weeks after, the same appeared on the left side, accompanied by great tenderness at all times, but particularly at the menstrual epoch. The catamenia then became more scanty, darker, and more painful than usual. There was

dorsal pain and slight leucorrhœa. Twelve leeches had been applied, with but little benefit, but blisters had been more efficacious. When I saw the patient she was exhausted by continued suffering, and was at times affected with hysteria. Menstruation had not appeared for the previous two months. Digital examination was painful both to the vagina and to the womb, which was somewhat swollen; there was acute pain on pressing in the direction of the ovaries, the right one being still swollen; both breasts were very painful. On the 1st of August the patient was better; examination was no longer painful; pressure in the ovarian regions was less so; the womb was neither swollen nor painful, neither did it present any lesion when examined through the speculum. I prescribed cold-water injections to be made twice a day, per rectum, and twice a day a vaginal injection of two drachms of tincture of hyoscyamus in half a pint of tepid water. The patient rapidly improved, lost all pains, and became stronger. She has had no relapse, but, although married sixteen years, has never been pregnant.

The blighting of the impregnated ova while they are still contained in the Graafian follicle cannot be denied. De Graaf pointed out this possible fate of the human germ, its disease, adhesion, and absorption, in the midst of the inflammatory action, and a proof may be seen in the case related by Sir E. Home—*Phil. Trans.*, Vol. CXI. p. 107:—"The most careful dissection satisfactorily proved that the tumour—a fœtus of about four months' growth—was covered, not by the peritoneum, but by the coats of the ovary itself; in proof of which, fragments of the *corpus luteum* were seen on the coats of the ovum. From the adhesion of the membranes of the ovum to the corpus luteum, Sir E. Home inferred that inflammatory action had supervened and led to the detention of the ovum in the ovarium."

Pouchet and Meigs admit that, the ovule being retained within the capsule by the granular retinacula, might be the subject of impregnation by sperm brought to it in the fimbria of the tube. "Let me suppose," says Dr. Meigs, "impregnation to have been effected, then some change of position covering the sporule with a peritoneal superficies permitting of adhesion, the ovulum would be necessarily shut up in the

crypt or cell, which, having now become again a shut sac, development of the germ would go on absolutely in the interior of the ovulum."

2. PERITONITIS.—"*On peritonitis as a cause of functional derangement of the organs covered by the peritoneum,*" would be a useful subject for a prize essay.

Peritonitis shows itself under various forms. There is acute peritonitis, which is caused by the bursting of an ovarian abscess, and there is chronic peritonitis, but on these I shall only touch incidentally, reserving myself for treating more fully ovarian or pelvi-peritonitis.

PELVI-PERITONITIS.—The frequency of peritonitis is inferred from that of inflammatory sequelæ in the female pelvis, but little else is recorded in works on diseases of women, beyond the fact of sterility being often caused by peritonitis, and its occurrence being a complication of ovarian tumours and cancer of the womb.

In previous editions of this work I have brought together many important facts connected with the history of pelvi-peritonitis, and insisted on its frequent occurrence during morbid menstruation; but to Dr. Bernutz is due the credit of having clearly traced the very obscure origin of those pelvic adhesions, false membranes, and bridles of lymph, with the appearance of which all are familiar, in the vicinity of the womb and ovaries. The great difference between general and local peritonitis is, that the first has always a lethal tendency, and is frequently fatal; the second is often a salutary effort of that internal providence which shapes a morbid process into a means to prevent worse mischief. This is so true, that we sometimes seek to determine local peritonitis, and to bring about the adhesion of the opposed peritoneal surfaces, so that we may be able to empty a pelvic or an hepatic abscess—an hepatic or an ovarian cyst.

Partial peritonitis, whether situated in the abdomen or pelvis, frequently occurs without being the result of any salutary effort of nature; but it is so seldom fatal, that little opportunity is afforded of testing the accuracy of the diagnosis: it cannot, however, be of uncommon occurrence, if Dr. Bernutz has met with ninety-seven instances of it during three years' hospital practice at L'Ourcine and at La Pitié. Should further

observation confirm this frequency, it would not surprise me, for the great frequency of these inflammatory lesions of the peritoneum in the female pelvis has been insisted on by Carswell, Lever, Oldham, West, Farre, Renaud, Mr. Canton, Mercier, Gendrin, Grisolle, and Rokitanski.

Aran agrees with me, that the paramount lesion and chief element of peri-uterine inflammation is the inflammation of the ovary and the Fallopian tubes, and at page 663 he gives several cases which will repay perusal. Of the ninety-seven cases met with by Dr. Bernutz, forty-three were puerperal, thirty-five occurring in the fortnight which followed parturition, or coming on after abortion. Twenty-eight instances were caused by blennorrhagia; twenty could only be referred to some derangement of the menstrual functions, and six were brought on by some other causes which I shall soon enumerate. The puerperal state, and the lesions to which the pelvic organs are liable in parturition, even when instruments are not used, explain the frequency of pelvi-peritonitis after parturition; it is, in general, chronic from the beginning, resembling those instances of latent pleurisy which are only detected long after the first period of their development. Not only does menstruation often determine peritonitis during the course of blennorrhagia, but in twenty cases no other cause could be found, except a morbid condition of the menstrual function; the attack sometimes coming on after the sudden suppression of the menstrual discharge, and at other times supervening after an unusually scanty flow. Dr. Oldham likewise admits pelvic peritonitis to be a frequent cause of much of the pain and habitual sufferings of women during their menstrual periods. Seven out of the ninety-seven cases of pelvi-peritonitis could not be classed in the previous divisions; two cases occurred after the use of the uterine sound, one after the douching of the vagina with cold water, two after venereal excesses, and two during the progress of chancre on the neck of the womb. Dusourd gives the case of a woman who, being in good health, washed in cold water on the second day of the menstrual flow, which was suddenly suppressed; nervous symptoms and fever came on; the legs and thighs swelled, and the patient died of peritonitis the fourth day after the suppression of the flow. Mr. Canton opened the

body of an unfortunate young woman of sixteen, who had lived under the dark arches of the Adelphi; he found the recto-vaginal space occupied by false membranes as firm and numerous as he had ever met with in the pleural cavity; the fimbriated extremities of the Fallopian tubes were intimately united to the ovaries; the appearance of the parts showed that acute local peritonitis had taken place long before death, and except that she had often cohabited with as many as twelve or fourteen persons in one day, nothing could be ascertained respecting the girl.

Why should such bridles be more frequent in the vicinity of the ovaria? This question has been answered in the *London Medical Gazette*, by Dr. Renaud of Manchester:—

CASE 59.—“S. A. S., aged twenty-one, and single, was exposed to cold ten days previously to her death. This exposure was followed by pains in the abdomen and constipation. Five days from this, sickness and tympanitic distension of the bowels came on. Over the umbilical region there was slight pain on pressure. Pulse 104. In two more days stercoraceous vomitings ensued, and continued with more or less intensity, until she gradually became comatose and died. For the last seven days of this young woman's illness everything in the way of treatment that could be devised was resorted to, but without producing any result. If medicines did not aggravate the symptoms, they certainly proved quite ineffectual to remove them. From her own account, she had enjoyed good health up to the time of the seizure which ended her existence. At a post-mortem examination, the abdomen was seen much increased in size from accumulation of solid matters and flatus. There was not any effusion of recent lymph, and but trifling injection of the vessels. The great omentum adhered firmly to the uterus and its appendages, and to the viscera in the pelvis, by numerous firm bands of lymph of old standing. In the right iliac fossa two bands of lymph stretched from the peritoneal surface lining the abdominal walls to the peritoneum covering the ilium, about three inches from the termination of this bowel in the colon. By a contraction of these bands the gut was so far twisted upon itself as to produce a complete stricture—so complete, indeed, that not a drop of water would pass through, even

when the bands of lymph had been severed. The long-continued traction had caused a distinct narrowing in the calibre of the gut, which had ended in permanent canalicular obliteration. In this respect the case may be considered very rare, and withal instructive, as showing that, although an operation during life may, in the majority of instances, succeed in liberating the gut from its incarcerating band, yet that, in every instance, such a result is not necessarily associated with the integrity of the calibre of the gut itself. In connexion, also, with this case, and with those of a similar nature, pathological anatomy seems to justify a conclusion not hitherto, I believe, fairly put before the profession—viz., that, although internal strangulations or incarcerations of the bowel are common to both sexes, yet that the great majority of them happen in women ; or, to put the case in other terms, the animal economy in females furnishes an exclusive source of disease to which, from a difference in organization, males are not, neither can be, liable ; that, although the result in each sex is the same, yet that the elements of the disease are differently sown, and brought to a culminating point by a train of morbid phenomena that admits of no parallelism. In males, where the strangulating bridles consist of lymph, they must be referred back, for their origin, to one or more *idiopathic* attacks of peritonitis of greater or less intensity. In females, on the contrary, I think my own experience in pathological anatomy, and a perusal of the cases recorded by others, justifies the conclusion, that the peritonitis arises in many instances out of a chronic form of congestive irritation to which the generative apparatus within the abdomen is liable. That this long-continued irritation, as manifested directly by pain and throbbing in the region of the ovaries and uterus, and indirectly by lumbar irritation, dysmenorrhœa, crural pains, &c., does frequently advance to local inflammatory action, is sufficiently evident from the bands of lymph that are so frequently seen matting the ovaries, broad ligaments, and oviducts together. If, therefore, folds of bowel or portions of omentum are in contiguous relationship with parts influenced by these morbid actions, it is not contrary to rational pathology to infer that they will partake in a limited degree of the same actions ; and, a bond of union

being thus morbidly constituted, it only requires time, and the peristaltic action of the bowels, to elongate the lymph into a band which, under accidental circumstances, may prove an incarcerating medium. If these premises be allowed, it follows that females have a liability to internal incarceration of the bowel, borne out by both pathology and anatomy, over and above that of which males can be the subjects. In another case, bands of old lymph were found freely passing from the uterine organs to different parts of the bowels. In another instance, where two-thirds of the ilium were constricted between two bands of lymph, the origin was at the rectum, immediately behind the uterus. That such persons can only have suffered from what is commonly recognised as uterine irritation, seems clear from the fact of assertions being over and again made, that, up to a certain point, no suspicion of inflammation has been harboured, and no adequate treatment been adopted for its subdual."

Pain more or less intense, and localized in the iliac regions, is one of the first symptoms ; it is exasperated by the patient's movements and by pressure. There is sometimes an initial fit of shivering, with a small pulse and slight fever. Vomiting seldom occurs ; but there is nausea, with loss of appetite, constipation, or diarrhoea. At first, a digital examination is very painful ; and as it is, moreover, useless, it had better be deferred until after a few days, when the pain and other symptoms have abated. Then the finger will detect that the lower part of the neck of the womb is more or less encircled by a more or less doughy substance, which sometimes seems to form part of it. Chronic peritonitis seldom leads to a fatal termination ; but if it be long protracted, there will ensue a state of anæmia, and a general break-down of health. This condition may be hastened by floodings, or by long-persisting uterine inflammation and discharges ; and, as might be anticipated, an endless variety of nervous and hysterical symptoms will then make their appearance. These are the worst consequences of pelvi-peritonitis ; but the large majority of patients recover without experiencing, in after-life, any inconvenience. Thus Rostan remarks, that if some consider that iliac abscesses most frequently end by resolution, it is because they confound an iliac abscess with partial perito-

nitis, which is of frequent occurrence, and is generally terminated by resolution. This is evident from the fact of our so frequently finding, at post-mortem examinations, pelvic bands and adhesions which had not in any way interfered with health. Those, however, in whom repeated attacks of pelvi-peritonitis have developed solid unyielding bands, awkwardly attached, remain ever liable to serious accidents. Thus it has been affirmed by Rokitanski and others, that women are subject, more than men, to incarceration of the bowels, owing to their becoming obstructed by one of those strangulating bridles, as in Dr. Renaud's case; and Dr. Brinton has lately stated, at the Royal College of Physicians, that intestinal obstruction by bands and adhesions on the diverticula or the peritoneum external to the bowel, might be estimated at $31\frac{1}{2}$ per cent.

Displacements of the womb are much more frequently caused by pelvi-peritonitis than is generally admitted, and it is obviously absurd to treat such cases by intra-uterine pessaries. Thus, I have found the womb drawn up by bands, uniting its fundus to the anterior walls of the abdomen. Huguier has found latero-flexions of the womb to be caused by pelvic adhesions; and if, as Dr. Oldham has correctly observed, dysmenorrhœa induces retroversion, it is sometimes owing to peri-uterine inflammation, and subsequent adhesions. Struck by the frequency of adhesions when the womb is in a state of flexion, Virchow has even supposed that the uterus was bent upon itself by the bands originating in peritonitis; but, with Scanzoni, I rather look upon them as complications determined by the prolonged flexion of the womb. In some cases, false membranes so bind down the womb as to render its flexion permanent, and any attempt to correct it dangerous. It is said that partial atrophy of the womb has been likewise caused by the pressure of voluminous false membranes. In like manner, if part of an ovarian tumour becomes inflamed, it often brings on local peritonitis in the corresponding portion of the peritoneum, thus producing those adhesions so difficult to detect, and which have so frequently prevented the removal of ovarian tumours after the operation of gastrotomy. Cancer of the womb is generally associated with pelvi-peritonitis, by which it becomes more or less immovably fixed.

It will be evident that pelvi-peritonitis will seriously interfere with the functions of generation when the bands extend over the ovaria and the oviducts.

"The adhesions," says Sir R. Carswell, "which form between the uterus, Fallopian tubes, and ovaries, and the surrounding parts, are much more productive of serious effects than in any other region of the body; and in order to give additional importance to the study of them, I may observe that they are not an unfrequent, and certainly one of the most obvious causes of sterility. They produce, according to their situation and mode of attachment, either anteversion or retroversion of the uterus; they fix the Fallopian tubes in situations in which the fimbriated extremities cannot reach the ovaries, or they envelope the fimbriated extremities in such a manner as to render them quite impervious—which is always the cause of dropsy of these tubes—or lastly, they cover the ovaries so completely, that impregnation is rendered impossible." For, although the Fallopian tubes be bound down, the ovaries, if healthy, still proceed with their special function, ovulation; and whenever an ovum is detached from its ovarian cell, its *matrix superior*, as Fabricius de Aquapendente calls it, and is accompanied by a certain amount of sero-sanguinolent fluid, which is the lochia of the ovarian nidus, it falls into the peritoneal cavity.

It very often happens that successive attacks of pelvi-peritonitis occur at menstrual periods, the pelvic organs become matted together by the plastic exudations surrounding both ovaries and the womb, so as to form large tumours, which often obscure the diagnosis; thus, Dr. Grisolle remarked, in a clinical lecture, "that, after having published his papers on pelvic abscesses, cases were repeatedly sent to him by men in extensive hospital practice, as instances of iliac abscess, in which there was nothing but an accumulation of false membranes in that region." Such tumours are sometimes sufficiently extensive to deaden sound elicited by percussion, and in proportion as they disappear by absorption, the abdomen resumes its usual resonance. This imperfect sketch must not be concluded without pointing out some of the instances in which the conservative agency of local peritonitis is apparent. Should any of the pelvic viscera

become inflamed, the adjoining peritoneum thickens, becomes inflamed, and throws off plastic exudations, to prevent the fatal effusion of urine or fæces into the peritoneal cavity. One may certainly admire the efforts of nature, on finding false membranes forming a semi-cartilaginous cyst around a diseased portion of intestine, so as to receive the fæcal matter which would be fatal if effused into the peritoneum. The conservative tendency of peritonitis which accompanies cancer of the womb or other pelvic viscera, is equally obvious although less successful. In one form of hæmatocele, blood collects in the pelvic portion of the peritoneal cavity, in which case plastic lymph is thrown up, so as to circumscribe the blood, and cut it off from the rest of the serous sac. The same process may circumscribe serum in a similar way, so as to form pelvic serous cysts. In a case of this description described by Dr. Demarquay—Académie des Sciences, 1861—a round fluctuating tumour was situated between the uterus and the rectum, pressing the one forward and the other backward, interfering with micturition and with defecation. He freely opened the tumour through the vagina, and injected a solution of iodine with complete success.

ASCITES.—As pneumonia often leads to pleurisy, so uterine and ovarian inflammation sometimes causes ascitic effusion. Forestus had already described dropsy as a consequence of suppressed menstruation, and a case of this kind is given—*Philadelphia Jour. of Med. Sci.*, Vol. IV.—where the patient was treated by volatile tincture of guaiacum, and cured by diuresis and diarrhœa, menstruation returning immediately after.

Dr. Martin Duncan of Colchester thinks that the ovaries sometimes relieve themselves from congestion by pouring out a morbid amount of ascitic fluid; and I cannot better explain my views, than by giving his remarks on a case which he has recorded—*Prov. Med. and Surg. Jour.*, Oct., 1848:—

“I believe it is very rare for the operation of paracentesis abdominis to be anything more than a palliative measure. In this case, it was clearly the means by which the ascites was cured; but it is evident that the success was determined by the cause of the serous effusion. There were no symptoms of renal disease, and the previous history and the general

appearance contradicted all ideas tending to the probability of there being any obstacle to the passage of blood through the liver. There were no symptoms of general peritonitis, but pain over the situation of the left ovary existed, with deficiency of the menstrual flux previously to the appearance of any abdominal swelling. Such symptoms are common enough, are to be referred to congestion of the ovary, and are usually relieved by the discharge of the monthly flux, the congestion being hardly abnormal. In this case I consider that, instead of the congestion being relieved by the discharge from the mucous surface of the uterus, the peritoneal covering of the ovary took on an unusual function—serum transuded into the general peritoneal cavity, and relieved the tension of the vessels in its immediate neighbourhood. At each monthly period, for some time, fresh effusion occurred, the general loss of tone of the system preventing its total re-absorption; by-and-by the effusion increased to such a degree, by successive depositions, that the chances of its absorption by the means usually employed by nature became much diminished; and powerful drastics, diuretics, and diaphoretics, although given for months, hardly prevented further accumulation. All now depended upon the diagnosis, for if the above view of the case happened to be correct, paracentesis might be recommended, and a good prospect of cure held out; but if the fluctuation depended upon the presence of fluid in a diseased ovary, although the operation might relieve, no benefit would permanently accrue from it. The commencement of the disease with pain in one side, accompanied by more or less tremor, and the general state of the health, tended to the idea of the dropsy being a cause, but occasionally the drum-like sound of intestine could be heard, by carefully percussing above the umbilicus; and when she had reclined on one side for some time, it became evident over the other. The idea of there being a collection of fluid within a cyst was then hardly tenable. The operation was decided upon, and performed with a successful result; and the general health being improved by good diet and country air, the peritoneal surface of the ovary no longer relieved the hyperæmic condition of the organ, the uterus took on its proper function, and speedy restoration to health

supervened." Puncture, performed by Dr. Dumarquay under similar circumstances, was, however, fatal.

These statements are confirmed by the following case:—

A patient, aged forty-six, was received at the Hôpital St. Antoine. Menstruation had been habitually regular; she was a mother at twenty-one, and had enjoyed good health. While taking a warm bath, to promote the menstrual flow, it ceased, and did not return. The lower extremities and the abdomen swelled, fluctuation was evident, and equally so whatever position was given to the patient. Dr. C. Bernard, in relating this case—*Gaz. des Hôp.*, 5th Jan., 1850—gives another, where suppression of menstruation brought on tuberculous peritonitis.

For the reasons just brought forward, I believe idiopathic peritonitis to be much more frequent in women than is generally supposed. The cases adduced explain how, in one London hospital, St. George's, the medical practice, in 1850, afforded four instances of idiopathic peritonitis. In young women of twenty, twenty-one, and twenty-four years of age, I have repeatedly observed an insidious creeping form of peritonitis which is both acute and chronic. Its march is slow, the general symptoms are mild, while the local, are those of acute inflammation limited to a small area; so that peritonitis, starting from the ovarian regions, may creep up gradually to the diaphragm. The absence of fever, various nervous symptoms, and excessive hyperæsthesia of the abdominal walls, often cause the case to be considered hysteria. The following instance will aptly illustrate my meaning.

CASE 60.—Miss ——— was thirty-seven when she consulted me in 1860. She is of middling stature, thin, with dark hair and eyes. Her mother is in excellent health; her father died of consumption, and she was delicate from her childhood. Menstruation first came with great pain at twelve, and continued regular from her thirteenth year with only ten days' interval, being brought on by excitement, exercise, and riding. Coupling this with the fact that she suffered from back pain, pelvic pains, hysteria, and the inability of walking, it is to me nearly evident that uterine disease had existed for many years. At twenty-one she became the inmate of an hydropathic establishment, but derived no benefit from hydropathy.

At twenty-four, mesmerism restored her appetite and the use of her legs; the uterine symptoms remaining the same, and homœopathy was uselessly tried for several years. In 1856 the menstrual flow had become very scanty, and decidua membranes were frequently passed. Dr. H. Bennet detected and cured extensive ulceration of the neck of the womb, and the patient's general health improved, and she was able to travel. Not feeling well, this patient directed her steps homeward in 1859, but was detained two days at Susa, and the inn where she stopped was surrounded by the French troops, who were suffering much from dysentery, with which she was laid up, at Geneva, and was still suffering from when she arrived in town, for she frequently passed large quantities of mucus and blood, with great pain. There was also evidence of chronic internal metritis in the enlargement and tenderness of the body of the womb, and in the passing of a red or purulent discharge for several days before menstruation, which confined her to her bed for several days. In the winter of 1860, ulceration of the cæcum became more and more clear both to Dr. Brinton and myself, and in 1861 sharp pains, and subsequent thickening around the cæcum, showed that partial peritonitis had come on.

The usual symptoms of dysentery were only relieved by taking daily five grains of opium, farinaceous diet, and the application of five leeches to the womb before the menstrual periods; which relieved more than anything else, with the exception of opiate suppositories, which subdued pain and gave sleep. After passing several months in the country, during which time the dysenteric symptoms were better, though the menstrual periods were more painful, the patient returned to town complaining of an increase of pelvic pains; and as the womb was congested and extremely sensitive, I applied five leeches to its neck. They took little blood, gave intolerable pain, and forthwith acute pelvi-peritonitis set in, with lancinating pains increased by moving and by pressure. After a few days' lull, menstruation, with a slight flow, gave fresh impulse to peritonitis.

About the twentieth day of this attack, inflammation had gained the serous coverings of the stomach and liver; sickness was intense, and the patient felt choked with bile. These

symptoms and the lancinating pain over the pit of the stomach had subsided, when on the 25th the sensation of a cord round the chest, and increased difficulty of breathing, showed that the diaphragmatic peritoneum had become inflamed. The absence of cough, the freedom of speech, the sonority of the chest, showed it to be untouched by disease. These symptoms yielded to treatment, but the pulse rose, fever became more marked, with increased debility, difficulty of taking food, and a fixed idea that this was to close her long list of illnesses. The treatment was simple; the patient continued to take the usual four pills of one grain of the watery extract of opium, warm linseed-meal poultices were frequently applied to the abdomen, which was previously coated with mercurial and belladonna ointment, ice, lemonade, effervescing draughts, were taken for the sickness, and as the bile would not move, I gave her one grain of calomel with two of opium with decided benefit. Once during the progress of the peritonitis, a sudden commotion of the heart and aorta caused the patient to think that death was nigh; after which the pulse, which had never been more than 60, rose to 100 and 120, and continued so for several weeks. Notwithstanding the aggravation caused by menstrual periods, and the supervention of retention of the urine, this patient is progressing towards recovery, after having been confined to her bed for more than three months. In this case chronic uterine disease predisposed to peritonitis; a first well-localized attack was caused by ulceration of the cæcum, and I believe inflammation was slumbering unnoticed in the peritoneum for several weeks before the application of five leeches to the neck of the womb caused the second wide-spreading attack, which had however one good effect, to promote the healing of ulceration of the cæcum, as the motions have contained no blood and much less mucus for the last few weeks. On quitting the bedside of this patient, Dr. Bence Jones said to me—"These are cases that cause our hospital rows; the physician calls the ill-defined abdominal pain, hysterical; the nurse snubs the patient; the other patients laugh at her; and after short-lived severity of symptoms, she dies of peritonitis. Friends and governors complain that the case was overlooked, and so it was."

Let the young practitioner think of peritonitis, and of its insidious advances from the reproductive organs, and he will avoid these mistakes. There is a case in point related in the *Australian Medical Journal*, 1856, of a girl of fifteen, who was supposed to be near menstruation on account of severe pelvic pains, and who was about as usual the day before she died. General peritonitis and perforation of the vermiform process were found, "the right ovary was much inflamed, and all the serous membranes in its vicinity much affected. Could the disease have been lighted up by the changes preparatory to the catamenial period, and have thence radiated to the serous surface?" judiciously observes Dr. Tracy.

What other explanation can be given of the following case published by Dr. Semple, *Lond. J. of Med.*, 1850 :

CASE 61.—A young woman, aged twenty, was attacked, March 8th, 1842, with peritonitis, and was discharged cured from the Islington Infirmary on the 20th of that month. On the 26th of April, or about a month afterwards, another attack of peritonitis carried off the patient in two days. This last illness was characterized by so much pain in the epigastric region, relieved by pressure, that many observers might, with Dr. Semple, have considered the case neuralgia, and ileus was suspected on account of obstinate constipation. Large doses of drastics and opiates were given, but without effect. The patient screamed from the intensity of abdominal pain, and, to the last, preserved her intellect unimpaired. The arachnoid and pia mater were found injected; the arachnoid was thickened and opalescent. There was no peritoneal effusion, some slight adhesions, but the right ovary was as large as a hen's egg, and contained an ounce and a half of pus enclosed in a sac lined with a smooth membrane.

3. ABORTION.—Dr. Granville, Mme. Boivin, with many others, and recently Dr. Barnes, admit that abortion is frequently caused by ovaritis or ovarian irritation. I have met with instances, in which a tendency to abort was only to be explained by internal metritis being protracted by chronic ovaritis. That peritonitis sometimes leads to abortion is evident, for the adhesions in the vicinity of the womb are of little importance so long as it is unimpregnated; but should

gestation occur, it will be attended by more than ordinary pain. When adhesions are slight, they doubtless can expand, or be torn asunder, which may explain some of the sufferings of women after miscarriage in early pregnancy, but if the adhesions cannot be overcome, the ovum will be prematurely cast off. This may give rise to a succession of abortions. Mme. Boivin has, in a special manner, called attention to this cause of abortion; and Dr. Lever has also given apt illustrations of its importance in the *Guy's Hospital Reports*.

4. UTERINE INFLAMMATION.—In treating of internal metritis, I have shown that it is sometimes caused, and always aggravated by chronic ovaritis; it produced other forms of uterine disease in the following cases.

CASE 62.—A married woman, aged twenty-five, was admitted a patient at the Paddington Dispensary for Women and Children. She was small in stature, of a sanguine constitution, and had been married three years without issue. She complained of pains in the abdomen, of a slight discharge, and of dysmenorrhœa, with either a profuse or a scanty flow. On examination, I caused little pain by pressing the ovarian regions. The neck of the womb was sound in every respect. Considering that the general health of the patient was in fault, I gave opening medicine, tonics, and ordered injections with a solution of alum. This treatment was continued several weeks. The general health improved; the discharge almost disappeared; but the pains in the ovarian regions became worse, and dysmenorrhœa increased. I ordered inunctions with mercurial ointment, and poultices to the inguinal regions, and the pain abated. But a fortnight afterwards leucorrhœa reappeared, with pain in the back; and, on a second examination, I found an ulceration of the inner surface of the cervix, which, outwardly, was red and swollen. I therefore admitted having taken a wrong view of the case, and that it was an ordinary case of ulceration of the neck; so I cauterized it with nitrate of silver, with the acid nitrate of mercury, and lastly, with potassa fusa. Such was the treatment employed for eight months, the patient being sometimes better, at others worse, and often remaining three weeks without treatment. The ovarian pains likewise varied, but finding that they were

very intense, being augmented by walking or pressure, and tired by the pertinacity of the case, I made an exploration per anum, and found the ovaries swollen, and very painful when touched. I immediately changed my plan of treatment, and ordered ten leeches to each inguinal region, and the regular rotation of blisters and ointment, besides cold enemata twice a day. The pains subsided, the leucorrhœa stopped, and a few weeks after, the neck of the womb was merely congested. After the succeeding menstrual period, I ordered a repetition of leeches, blisters, and ointment: and now the cervix is sound, the ovaries are painless, and the patient is well. In this case, I think that ovaritis produced the inflammation of the neck of the womb, and kept it up until the primary disease was discovered and energetically treated.

CASE 63.—E. W., aged twenty-two, of middling stature, with red hair and grey eyes, was admitted to the Paddington Dispensary, July 14, 1851. She menstruated at twelve, and has ever since been regular every month, even during pregnancy, and the ten months she suckled her child. For several months previous to, and since weaning the child, she has suffered much from pain in both ovarian regions, which pain was always increased by menstruation, by walking, by pressure, by ascending the stairs, or by any sudden jar. Lately, the left ovarian region has become the most painful, and the left breast has been likewise sore and swollen. For the previous weeks, the legs swelled at night; there is slight leucorrhœa, little fever, and she complains of feeling "heavy for sleep," and would sleep all day if she were permitted. On making a digital examination, there was no sign of uterine disease, but pressure directed towards the left ovary was intensely painful. I ordered the following compound camphor mixture:—Solution of potash and tincture of cardamoms, four drachms each; tincture of hyoscyamus, six drachms; camphor mixture, to six ounces; a table-spoonful to be taken three times a day, and a small quantity of the following powder to be taken in a little milk at night:—Sulphur, two ounces; biborate of soda, one ounce; while three or four drachms of the following ointment were to be applied, not rubbed, over the lower portion of the abdomen:—Strong

mercurial ointment, one ounce ; extract of belladonna, two drachms. I then directed a thin linseed poultice to be applied over the anointed surface, and over that a piece of oiled silk, with the understanding that this application was to be removed and re-applied as soon as possible in the morning, at two or three in the afternoon, and before disposing the patient for her night's rest. July 17th.—The patient was better ; the pains were only violent at times ; there was no leucorrhœa, and the bowels were comfortably moved. 21st.—Ovarian pains were all gone ; the mercurial ointment was therefore discontinued. 28th.—I learnt that on the 22nd, after an attack of diarrhœa, menstruation returned ten days before it was due, but unaccompanied by ovarian pains. I prescribed the following pills, to be taken at night :—Sulphate of quinine, one scruple ; extract of opium, five grains ; extract of liquorice, a sufficient quantity to make ten pills. But upon leaving, and before this treatment could be begun, menstruation again appeared, and there was a throbbing and swelling of both breasts, and pain referred to the pubis. On making an examination, the neck of the womb was found hot and swollen ; I ordered injections with a solution of acetate of lead, and returned to the application of the compound mercurial ointment. I saw the patient after the subsequent menstrual period, which was normal as to time, quantity, and pain ; the womb was ascertained to be healthy, and the patient was quite recovered. This case was first one of sub-acute ovaritis, lasting for months, until the increased uterine activity, swelling of the womb, and irregular and prolonged menstruation necessitated the employment of local measures to remove uterine congestion. The mercurial applications, however, should not have been discontinued on the subsidence of the ovarian pains ; for as the womb was in a healthy state on the 14th inst., if they had been continued, the slight attack of uterine disease would have probably been avoided. If I had not positively ascertained, on the 14th, that the womb was in a healthy state, I should, on finding it slightly diseased on the 28th, have concluded that the previous pains were to be attributed to the beginning of undiscovered uterine affection, and not to ovaritis, which I believe to have been the primary affection,

determining the uterine inflammation in the same way as the physiological congestion of the womb in menstruation.

CASE 64.—C. K. was sent to me in 1849 by Mr. Pughe of Aberdovey; was about twenty-six years of age, her constitution was lymphatic, but her hair and eyes dark. In childhood she had several abscesses in one of her legs and in the groin. Menstruation appeared at fourteen, but at sixteen was suspended, from her catching cold; and when it returned, it was three-weekly instead of monthly, as before; was either profuse or scanty, and was preceded for a week by great pain in the ovarian regions, which was aggravated by pressure, walking, or stooping. This state, lasting for several years, had brought on dyspepsia, palpitation, hysterical symptoms, and there was often leucorrhœa. Digital examination was so painful that I contented myself with having ascertained that the vagina and neck of the womb were swollen, hot, and inflamed. Pressure on the ovarian regions was also very painful. Leeches had been applied to them a fortnight previously, and with great benefit; I therefore ordered twelve more to be applied, prescribing the usual treatment, with the addition of aloes pills, and cold-water injections per rectum. Oct. 28th.—I was able to make a speculum examination, and ascertained that there was no ulceration of the womb, which I was led to expect from the persistence of leucorrhœa. When the finger in the vagina was directed towards either of the ovaries, a sickening pain was determined; and when the left hand was pressed moderately on the ovarian region, so as to compress the mass of intervening tissues between both hands, the pain became intolerable. This patient was for several months under my care. After each menstrual epoch, six leeches were applied to each ovarian region; when the leech-bites had healed a blister was applied to the same part, and when these were healed, the same surface was anointed with mercurial ointment until the time when menstruation made its appearance. Feb. 13th, 1850.—She was without pain or discharge, menstruation had assumed its normal type, and with little pain, and she returned to Wales quite well.

Under the influence of chronic ovaritis, the walls of the womb may be soft, compressible, and very painful to the

touch ; after repeated engorgements the tissue becomes harder, more solid, very much like the tissue of an *erectile* tumour, or that of a fibrous growth, and at the same time the sensitiveness of the neck of the womb becomes morbidly increased. The following is a case published by Prof. Recamier—*Gaz. des Hôpitaux*, Feb. 12, 1850 :—

CASE 65.—I was consulted by Madame R., who for the last eight years had suffered considerably from ovarian irritation, attended by much pain in the right iliac fossa. Sexual intercourse also produced intense suffering. Such had, in general, been the state of the patient's health, though it varied for better or for worse. On examination, I found to the right, a little above the uterus, an inflammatory tumefaction of the right ovary, about the size of a hen's egg, which was very painful, even if touched ever so gently. This tumour was distinctly felt by the double-touch, the left hand pressing on the hypogastric region. There was also considerable erectile swelling of the anterior lip of the os uteri ; little fever. I applied leeches to the right inguinal region, ordered poultices, baths, &c. &c. When the ovarian tumefaction was diminished, as there still remained some engorgement of the neck, it was cauterized three or four times, at four days' interval. After seven weeks' treatment, the patient returned home perfectly cured.

Nonat makes the following remarks—*Gaz. des Hôpitaux*, March 16, 1850 :—"Inflammation of the lateral ligaments may exist alone ; at other times, it may be complicated by metritis, or ulcerations of the neck of the womb, or by granular inflammation of the same—complications which render the diagnosis more difficult, and which have frequently given rise to mistakes. Very often the whole treatment has been directed to these *secondary* lesions, without its being in the least supposed that they owed their origin to inflammation of the broad ligaments. When such uterine lesions are found, it behoves us to ascertain whether the lateral ligaments are not the seat of inflammatory action."

CHAPTER XXVIII.

“If diseases of the ovaria could be detected in their earliest stages, they might often be cured.”—ASTRUC.

DIAGNOSIS AND PROGNOSIS OF SUB-ACUTE OVARITIS.

THE length to which I have extended my remarks on the symptoms and terminations of sub-acute ovaritis, renders it unnecessary to protract this chapter. Cases similar to those related in the preceding chapters have doubtless been of frequent occurrence, but they have been differently interpreted, according to the state of medical science.

I. Formerly when they were met with, and sometimes even now, particularly when not occurring at the monthly periods, they were confounded with diseases of the womb, and called inflammation of the bowels—a name which will doubtless be considered erroneous, so far as the localization of the disease is concerned, but which, being fortunately correct in the indications of its nature, often led to antiphlogistic treatment.

II. When cases similar to those I have reported, took place at, and in connexion with, the menstrual periods, they were, and are even now, confounded with many other morbid states, under the name of dysmenorrhœa. They are considered to be merely an increase of that pain by which menstruation is usually attended, and generally left without treatment.

III. Some would be inclined to explain my cases by incipient uterine disease, and might be impelled by theory to resort to measures, excellent in uterine, but unnecessary in ovarian disease. Being in doubt as to some of the cases which fell under my own observation, a digital examination convinced me that there was no uterine disease; and in the history of many others there was nothing to make me suspect its existence. Admitting that the cases I have related were neither those of inflammation of the bowels, of dysmenorrhœa, nor of uterine disease, they can only be explained by sup-

posing them to depend on a nervous affection of the ovary itself, or of the lumbo-abdominal nerves, which supply *alike* the womb, the ovaries and their protecting cavity, unless I am right in considering that they exemplify a subdued type of ovarian inflammation. It would be impossible for me to show that they did not depend on ovarialgia or lumbo-abdominal neuralgia, unless I am permitted to clear the ground by a few remarks on these affections.

Ovarialgia has been admitted by systematic writers, vaguely described by German pathologists, and lately brought prominently forth under the name of ovarian irritation, by Dr. Fleetwood Churchill. This has been lately called *Ovarie* by Négrier, who describes under this name an ovarian swelling with hysterical and other nervous phenomena. To affirm that the ovaries are not liable to neuralgia, would be absurd; but I agree with Dr. Marotte—*Archives Générales de Médecine*, May, 1860—that it is impossible to prove that they are the seat of neuralgia, rather than the branches of the lumbo-sacral nerves at their points of emergence.

Certain forms of *lumbo-abdominal neuralgia* were well described by Chaussier; but it is only since the modern investigations of the nervous system, that it has been permitted satisfactorily to explain, by lumbo-abdominal neuralgia, several morbid states formerly ascribed to the abdominal viscera. Without pretending to say that ovarialgia does not exist, I am inclined to think that cases described as such are, in general, to be referred to lumbo-abdominal neuralgia. I make this assertion with some hesitation, because by so doing I find my opinion opposed to that of an obstetric authority of so great value, that by differing from it I incur the risk of being wrong; but, if wrong, my dissent will furnish Dr. F. Churchill the opportunity of more forcibly vindicating his own opinions. On perusing his interesting communication on "Ovarian Irritation," in the impression of the *Dublin Medical Review* for July, 1851, and comparing it with what Drs. Beau, Valleix, and some other French authors have written on lumbo-abdominal neuralgia, it will, I think, be evident that they have all described the same disease. Neither would it be difficult to explain the mistake; for it is well known that it is in the nature of the affections of nerves to be attended

by pain which is concentrated in certain points, whence at times it radiates, and pressure on which increases pain. The lumbo-abdominal neuralgia is often indicated by one or more of the following *foci* of pain :—1, the lumbar ; 2, the iliac ; 3, the hypogastric ; 4, the inguinal ; 5, the uterine. I think that Dr. Churchill, being particularly struck by the inguinal or ovarian point of pain, has described, under the name of ovarian irritation, a complaint which has been justly referred to a morbid sensibility of the lumbo-abdominal nerves by Drs. Valleix, Axenfeld, Beau, and others ; he has followed in this the example of Gooch, who described as irritable uterus those cases of lumbo-abdominal neuralgia in which the neck of the womb is the principal centre of pain—an example already set by neuro-pathologists, who have described as spinal irritation another ill-defined group of symptoms.

I refer the reader to Dr. F. Churchill's paper, and to the authorities I have quoted, in proof of the great similarity, if not identity, of the morbid state described as ovarian irritation or lumbo-abdominal neuralgia. But, under all circumstances, I object to the term *ovarian irritation*, because it has already been employed to express the physiological action of the ovaries, and imports another vague and indeterminate term into ovarian pathology, already sufficiently obscure. If it be only pain, let it be called ovarialgia, or lumbo-abdominal neuralgia. Supposing it be conceded, until further researches, that ovarialgia is but another name for lumbo-abdominal neuralgia, then it only remains for me to establish the diagnosis between it and sub-acute ovaritis, which is often rendered difficult by the identity of the seat of pain in both complaints. Pain exists in all, but while in sub-acute ovaritis it is more fixed, continues with the same intensity without regular exacerbation, and is exasperated by every kind of pressure, in lumbo-abdominal neuralgia it is quite the contrary ; for although there may be at all times a dull, aching sensation, it is frequently not so, and the pain recurs by repeated attacks, and is relieved by wide or even by continued pressure with the united tips of the fingers. Dr. F. Churchill rightly says, that what he terms ovarian irritation is characterized by a kind of nervous tenderness, which shrinks from the weight of the finger as much as from severe pressure ;

and not by the *positive* pain, as in my cases. There is no swelling, no heat, no pain of the ovaries, when these organs are subjected to a rectal examination, as correctly stated by Dr. F. Churchill; whereas there is heat, swelling, pain, and sometimes fever, in sub-acute ovaritis. The pain is unaccompanied by any sympathetic pain of the breasts, or fever, in lumbo-abdominal neuralgia; not so in sub-acute ovaritis. Lumbo-abdominal neuralgia is so frequent an accompaniment of uterine disease, that Dr. Beau and others expect to find it when the former exists, and Dr. Bennet looks upon its ovarian focus as almost pathognomonic of uterine disease, while sub-acute ovaritis is not so frequently induced by uterine disease. Should the skin on being lifted give great pain, it cannot depend on a deep-seated lesion; irregular variations and the complete subsidence of pain point to neuralgia. Lastly, with regard to the treatment. Repeated blisters and opium are of the most use in lumbo-abdominal neuralgia, but such remedies, valuable in the later stages of the disease, are only useful after leeches, emollients, &c., in sub-acute ovaritis. Baths, which do good in uterine inflammation, often increase uterine neuralgia. It will often be found difficult to distinguish a well-limited nucleus of inflammation in the broad ligaments from a swollen ovary; it is liable to be mistaken for a small abscess developed in the Fallopian tubes; but Aran has re-echoed my assertion, that chronic ovaritis may be generally recognised by a rectal examination, which enables one to detect, beside or behind the womb, but separated from it by a more or less deep sulcus, an ovular body, which may be slightly moveable, giving the idea of elasticity, and with a more or less rough and indented surface; when, however, successive attacks of pelvic peritonitis have led to a large amount of plastic deposit, ovaritis is obscured by peritonitis. Dr. Bernutz's second volume will contain necroscopic evidence that a small, well-circumscribed mass of false membranes, situated on one side of the neck of the womb, cannot be distinguished from an enlarged ovary; fortunately, both diseases require the same treatment.

PROGNOSIS OF SUB-ACUTE OVARITIS.—Undoubtedly, many cases last for years without giving rise to alarming symptoms, but it sometimes causes serious uterine complications, and so

deranges health as to render it very precarious. The cases that have been related justify Aran's remark, that there is something alarming in the presence of a permanent focus of inflammation, which, from one moment to another, might spread to the vital organs. Those who suffer from chronic peritonitis, live under the menace of the acute form. I have recorded instances of patients who were in tolerable health, and in whom slight uterine interference rendered chronic ovaritis acute, and caused fatal peritonitis. In others peritonitis is partial, but each successive attack increases the amount of plastic deposit, causing the swelling lately described as peri-uterine, so I agree with Dr. F. Churchill that, "owing to the obscurity of the symptoms, and the anatomical relations of the ovaries, chronic ovaritis is serious, the prognosis always grave." It is fortunate when the disease entails the premature cessation of menstruation, for then a speedier cure may be anticipated, although a case now under my treatment shows that this hope may be delusive.

CHAPTER. XXIX.

Principiis obsta, sero medicina paratur.

TREATMENT OF SUB-ACUTE OVARITIS.

IT is necessary to bear in mind the peculiar functions of an organ when we wish to cure its diseases. As the ovaries are subject to a periodical excitement, and are the starting-points of the nervous currents which thence take their centrifugal course, determining in their passage the menstrual discharge, by which the regularity and intensity of these currents are manifested, one must admit the necessity of not interfering with the normal direction of such currents by active treatment during the menstrual epochs. The radical treatment of sub-acute ovaritis should be attempted during the intervals between successive epochs. I shall exemplify the treatment which I have found successful by a case in point, and afterwards offer some remarks on the remedial measures employed.

CASE 66.—*Sub-acute ovaritis producing sterility ; cure, followed by pregnancy.* When practising in Paris, in 1844, I was consulted by a gentleman about thirty years of age, presenting every appearance of good health, who told me that his wife was in her twenty-fourth year, that at the age of fifteen she menstruated for the first time, but that this function had always been accompanied by pain, and was frequently irregular in the time of its appearance. He had been married five years, and since then the menstrual discharge had been more regular, but accompanied by a great increase of pain. She was seldom subject to leucorrhœa, but sexual indulgence was sometimes painful. For the last year various means of medical relief had been tried, but with so little success, that her husband was not induced to consult me for his wife in the hope of my being able to relieve her monthly sufferings, but to inquire if there were any remedy for sterility. The lady presented all the appearance of a

lymphatic constitution; she looked delicate, but was in tolerable health; she did not expect to menstruate for the next fortnight, and she was not then in pain; but on rapidly depressing the ovarian regions with the united tips of the fingers, I produced a pain similar to that she experienced when menstruating. On examining by the vagina, I received an indistinct perception of a small tumour, which I took for the right ovary; and on making a rectal examination, I distinctly felt both ovaries, each being swollen to about two inches in the long diameter. They were painful on pressure. Having ascertained the tumefied state of the ovaria, their tenderness on pressure, and bearing in mind the previous history of the patient, I considered them sub-acutely inflamed. A few days after, she suffered from dysmenorrhœa; the pain, on pressing the ovarian regions, was greater; and, on examining through the rectum, the ovaries were found still larger and more painful. When the period was over, I began the treatment by applying eight leeches over each ovarian region; the leech-bites being healed, I applied over the same region a blister, five inches in length; the cuticle was not removed, and three days after, when the skin was healed, I ordered the same region to be carefully rubbed for ten minutes, morning and night, with a portion about the size of a walnut, of the following ointment: ung. hydrarg., ʒj; ext. belladonnæ, ʒj; ext. hyoscyami, ʒj; camph., gr. x; the abdomen to be afterwards covered with flannel, without removing the ointment. I also prescribed enemata of aquæ camph., ʒxv; aquæ lauri-cerasi, ʒvi; sometimes adding tinct. hyoscyami, ʒiii. A third of this quantity was injected into the rectum three times a day, the chill having been first taken off, so that it might be, as much as possible, if not entirely, retained. Due attention was paid to the regularity of the bowels, mercury being avoided, and saline purgatives preferred. For the first few days, until the blistered surfaces were healed, the patient left her bed only to recline on the sofa; afterwards she was allowed to take exercise as usual, and her strength was kept up by generous diet. Abstinence from the nuptial bed was strictly enjoined. On examining by the rectum a few days before the expected time, I found the ovaries diminished in size, but still painful to the touch. At the next menstrual period the patient

suffered less than she had ever done since her marriage. When menstruation had ceased, I subjected her to exactly the same treatment, and her sufferings were again diminished during the ensuing menstruation. She submitted to the same course a third time; when I found that the ovaries had resumed their usual size, and that pressure was painless. The third menstruation since the beginning of the treatment was attended by little pain. I discontinued the leeches, blister, and ointment, but advised the regular continuation of the enemata. Four months after this, the patient was pregnant, and in due time was delivered of a boy. Local depletion was prescribed to diminish the ovarian congestion; blisters, to break the chain of morbid nervous influences; mercurial ointment, narcotic extracts, and camphor, to reduce the pain and vascular excitement. The enemata were administered with the same intention. In another case, the symptoms of dysmenorrhœa were evidently caused by marriage. The patient was young and delicate; the same ovarian swelling was found and similar treatment employed; but my advice did not meet with equal attention. Her pains were, however, diminished, but relapses occurred. She was under treatment for six months; and though she had been sterile for seven years, she shortly afterwards became pregnant. When residing at Rome, I attended a similar case, and I have since heard that the carrying out of my instructions was followed by pregnancy, after six years of unfruitful marriage.

It will be obvious that the womb and ovaries are so intimately associated, that the principles of treatment apply equally to them both, so I refer the reader to what is written on uterine therapeutics in the second part of this work. I shall now point out the main indications of the treatment of chronic ovaritis, and then show how this may be modified so as to cope with constitutional peculiarities.

LEECHES.—It is better to apply these externally over the ovarian region; from eight to twelve will suffice, letting the blood flow freely afterwards. I do not at all agree with Aran and Scanzoni, that, in chronic ovaritis, it is right to apply the leeches to the womb itself, for relief must then be purchased, at the risk of offending the patient's feelings, by the interference of a surgeon, by whom they must generally

be applied. The mechanical irritation resulting from the prolonged application of the speculum, and the difficulty of drawing a sufficient quantity of blood, must also be considered drawbacks on this mode of application; while sometimes the bleeding is so abundant that it is necessary to plug the vagina. Neither is their application always painless; for when the leeches have fallen off, the pain is sometimes excruciating, and tends to keep up the congestion which it was sought to relieve. It was so lately in a patient whose womb I leeches, because many other measures had failed. In another lady, five leeches applied to the womb caused agonizing pains, and suddenly produced the symptoms of acute pelvi-peritonitis, which had been slumbering unnoticed for several previous weeks.

PURGATIVES.—These are advantageously given, both to counteract a tendency to inflammation, and to remove from the vicinity of the ovaria all causes of mechanical irritation, such as scybala, and morbid intestinal secretions. The most cooling purgatives, the saline and oleaginous, should therefore be given, while drastics and aloes, which act as the peculiar irritants of the lower part of the intestines, should be avoided, except when they are indicated to help the menstrual flow.

ENEMATA.—These are most valuable addenda to the preceding remedial measures, though seldom followed by a full amount of benefit, on account of their not being administered with due attention. Their composition should be similar to that prescribed in Case 66. Sometimes, I have substituted the tincture of belladonna or of opium for that of hyoscyamus; and in England I have seldom employed the lauro-cerasus water, on account of the difficulty of obtaining it, and of the variation in the degrees of its strength. With respect to the administration of injections, the bowels having been previously opened, or an injection of water having been made, four or five ounces of the tepid enema should be injected slowly into the rectum. The patient should lie on her back, with a pillow under the nates, so that the pelvis may be somewhat higher than the rest of the body. This injection should be repeated three or four times a day; and when it is considered that the liquid injected is separated from the inflamed ovaries only by a thin, elastic, and highly-

absorbent membrane, it will not be difficult to understand that enemata, thus carefully given, are productive of the greatest advantage. When the patient is cured, the medicated enemata should be replaced by cold water, to be likewise injected into the rectum morning and night. I do not know of any means better calculated to reduce the exaggerated ovarian irritation than the habitual use of cooling enemata; and I may remind the reader of their powerful effect in arresting hysterical seizures. By cold water, I mean that which has stood in an inhabited room, and which, when introduced, gives an impression of being very nearly cold, without chilling the patient; and in making injections, whether for the cure or the prevention of disease, the patient should be carefully told—1. Not to insert a metallic point into the rectum, but a rounded extremity, after having previously greased it with cold cream, and to advance it gently to about two inches in depth.

2. Not to inject the liquid with force, or it might mechanically increase the complaint; and to retain it as long as possible.

A great increase of pelvic weight, pain, and heat, would indicate that the injection had been either too cold, too hot, or given with too great force.

SUPPOSITORIES will be found useful, and seldom irritate, if care be taken to introduce them high enough up the bowel. I prefer those made of a quarter of a grain of extract of belladonna and three grains of extract of hyoscyamus; for they soothe without confining the bowels.

MEDICATED PESSARIES AND SUPPOSITORIES.—These are often very useful, enabling one to exercise a permanent action on the spasm of the uterus. The medicated ball being, at night and in the morning, placed in contact with the os uteri, and allowed to melt in the vagina, its active components are thus enabled to exert a permanent action on the generative organs. The following formulæ can be recommended:—Extract of belladonna, two drachms; camphor, ten grains; yellow wax, one and a half drachm; lard, six drachms,—to be made up into four balls.—Strong mercurial ointment, two drachms; extract of belladonna, one drachm; yellow wax, two drachms; lard, one ounce,—to be made up into six balls. According to the circumstances of the case, they may also

owe medicinal virtues to iodide of potassium, one drachm, or to acetate of lead, two drachms, for four pessaries.

VAGINAL INJECTIONS.—Cullerier, sen., and Lisfranc ascribe no great utility to narcotic vaginal injections; they are, however, often useful, and the precautions for giving rectal injections apply also to the vaginal.

MEDICATED INUNCTIONS.—These are peculiarly useful, but require no additional comment.

BLISTERS are serviceable, and so is antimonial ointment, of which Dr. Rigby says: "I know of no application so efficacious as the antimonial ointment, well rubbed into the part, and, when the eruption comes out, applied by a piece of lint, until a slight degree of sloughing is produced. The only objection to it is, that the patient is occasionally attacked with nausea, faintness, and other symptoms, from the system having been brought under the influence of antimony."

HYDROPATHY.—Physiologists, who have studied the action of baths, or the medical men of other countries, where baths form an important part of therapeutics, as well as of hygiene, are of opinion, that their sedative action can be rarely attained by stopping even an hour in the water, and they recommend patients remaining in it from three to four hours. This will doubtless seem strange to English ears; but I have too often seen women, suffering from ovarian or uterine inflammation, derive benefit from prolonged baths, to have any hesitation in recommending them. The temperature of the bath should be such as not to chill the patient, and the constant renewal of the warm water should so maintain it at the same degree of heat, that the patient may remain in it for at least an hour. Warm hip-baths are also serviceable to many patients; taken at night they increase the ability of the skin to absorb medicated applications.

I have already spoken of the utility of injecting cold water into the rectum in the more chronic forms of the disease; the cold sitz-bath is sometimes useful, so is the half packing of the patient every day or second day. I have sometimes advised a bag of ice to be applied twice a day over the ovarian region, and kept there for one or two hours. It is a painful remedy, and therefore only to be tried on failure of others; but I have found it beneficial, and have seen a case said to

have been cured by ice externally applied, and thrust high up the vagina as a suppository. Cold is suggestive of heat; and I shall merely state, that the Turkish baths are likely to do harm, so long as acute inflammation is not well subdued. With regard to mineral waters, I have not found them of very great service; saline waters, and those containing chlorides and iodine would be the most beneficial, such as Vichy, Plombières, and Kreusnach.

TREATMENT OF THE AMENORRHŒAL TYPE.

Even when accompanied by chlorosis, leeches may be necessary; the loss of a small quantity of blood is amply compensated by giving back to the system the full benefit of the stimulus it should derive from the healthy action of the sexual organs, and this will be effectually assisted by the administration of tonics and steel preparations. On the subsidence of the symptoms of sub-acute ovaritis, Bullock's syrup of citrate of quinine and iron is the tonic I generally prescribe, advising thirty to sixty drops to be taken twice a day, in a little cold water. The medical attendant's sagacity will be tested in his treatment of cases of this type, which he must be careful not to confound with those of another kind of chlorosis, which I have shown to depend on the arrest of ovarian evolution, in which cases antiphlogistics would do harm, while benefit would follow the use of local stimuli, such as warm plasters, blisters, or electricity, as advised by Dr. G. Bird, and even by the careful exhibition of emmenagogues.

TREATMENT OF THE DYSMENORRHŒAL TYPE.

Cases of this description are most obstinate, because they are often complicated by internal metritis or by peritonitis, and require to be attacked for months after each menstrual period, by the rotation of the remedies to which attention has been drawn. It is here that the small revulsive bleedings from the arm, the long-protracted tepid baths, the tepid injections with tincture of opium, extract of belladonna, or asafoetida, and one to two grains of camphor, rubbed in with the yolk of an egg, will be particularly serviceable. With regard to these narcotics, the practitioner, after beginning with the

usual doses, should give whatever amount is wanted to relieve the intensity of pain, otherwise they are useless. But under the annoyance of a prolonged treatment, the patient's hopes may still be buoyed up, by impressing on her that the ovarian disorder is such as permits one to believe, that in spite of her protracted sufferings, the integrity of the ovarian functions may not be seriously compromised. I have met with cases similar to that mentioned by Dr. Copland, as the most severe and obstinate instance of dysmenorrhœa for which he had ever been consulted, and still the patients have had a family.

TREATMENT OF THE MENORRHAGIC TYPE.

In spite of the patient's weakness, in some rare cases it may be necessary to apply leeches, so as to break in upon the *ruptus humorum* which is draining the patient; and thus to moderate, though not arrest, menstruation. This reminds me of a patient who was bled seven times for acute pneumonia, and nevertheless menstruation appeared immediately afterwards.

TREATMENT OF THE HYSTERICAL TYPE.

Those who particularly study mental complaints, or the diseases of women, are convinced that hysteria is frequently caused by some organic or functional disorder of the ovario-uterine organs. When dependent on sub-acute ovaritis, it is particularly necessary to bear in mind my reflections on preventive treatment in general; the urgency of watching over the healthy action of the sexual organs, and strengthening the nervous system, by mental and moral as well as by physical dietetics, but in this respect prescriptions are of little avail, for the patient is too often left at the mercy of capricious and misguided relatives. It would be worthy the ambition of every mother to seek to develop the "*mens sana in corpore sano*"—the *mens sana*, by the active exercise of those powers of mind which can alone keep in due subjection the flights of a vivid fancy, or the yearnings after an unknown happiness which will still obtrude its phantasms on the youthful imagination; and the *corpus sanum*, by giving increased action to the muscular system, through the different

modes of exercise, thereby correcting the exaggerated preponderance of the nervous system, and keeping in healthful play the different organs of the frame.

Is marriage to be sanctioned when women are suffering severely from this type of sub-acute ovaritis? I say decidedly not. The disease, in the generality of cases, may be removed by proper treatment, and if it cannot be so removed, then it is dangerous to subject a morbidly irritable nervous system to the new stimulus of matrimony, which, in such cases, causes generally an increase of the nervous affection, and of the sexual disorders. In this age of enlightenment people must be allowed, no doubt, to do what they please with their own bodies, but it behoves the physician to consider the race as well as the individual, and not to give his sanction to anything that may taint the purity of either.

Is marriage to be countenanced when the ovaries are prone to be sub-acutely inflamed? When sub-acute ovaritis is cured, and there merely remains a tendency to relapse, marriage may be permitted, for although the apophthegm has done great mischief, there is some truth in Pliny's assertion, that "*Multa morborum genera primo coitu solvuntur.*" I believe that nature, true to all her healthful impulses, promises the continuance of a greater amount of health to those who take upon themselves the burden of child-bearing, and the perils of delivery, and that marriage is, in many cases, a preservative against nervous diseases, and those spurious ovarian and uterine growths, before which the medical attendant would afterwards stand in powerless dismay.

TREATMENT OF PUERPERAL SUB-ACUTE OVARITIS.

With regard to the treatment of the puerperal variety of sub-acute ovaritis, I cannot do better than give a case published by Dr. Doherty, who was one of the first to draw the attention of the profession to this form of disease. The treatment already prescribed should be enforced with greater care, on account of the liability of the patient to more serious local disorder. Some have recommended that the mother should wean her child; but even if the supply of milk be diminished, it is more prudent to keep the mammary glands in a state of secretion, than by arresting their action

to add another cause of deranged function and of morbid excitement.

CASE 67.—“M. G., aged twenty-six, the mother of one child, which had been born in the Dublin Lying-in-Hospital a month previously, was readmitted on the 12th December, 1838—during Dr. Kennedy’s mastership—into the ward in that institution appropriated to diseases of females. Her labour had been natural, and she had been discharged well on the ninth day. Four or five days after she had left the hospital, sickness of stomach and diarrhœa set in, and slight pains occurred in the lower part of the abdomen. Within the last six days before readmission she had occasional rigors, and the pain in the abdomen, particularly towards the right side, had considerably increased. She felt, too, great stiffness and pain when she attempted to walk, or even to straighten her leg; pulse was 100, and soft. She slept generally till four o’clock in the morning, when she awoke bathed in perspiration; she had no difficulty in making water; her bowels had not acted for the last two days. On examination, great hardness and general tumefaction were detected in the right iliac region; the roof of the vagina, as ascertained by the touch, was exceedingly resistant, and the uterus firmly bound down, so that the fundus was turned towards the right side, while the os was directed towards the left sacro-iliac synchondrosis. The plan of treatment adopted consisted in leeching, blistering, and the exhibition of Plummer’s pill; under it the iliac region became softer, and the vaginal roof seemed inclined to relax. Iodide of potassium was then given, and iodine ointment applied internally to the roof of the vagina, while counter-irritation was maintained without. Her recovery was interrupted by her leaving the house for a few days, and shortly after her return on the 10th February, she had shivering during the night; next day her pulse was quick, there was considerable tenderness and tumefaction in the right iliac region, and the inability of stretching the leg was increased. During the night of the 12th, the pain in the right iliac fossa became exceedingly severe, so as to make her seize hold of the bed-post, and on the subsequent morning the tumour was found to have greatly increased both in size and tenderness; it formed a swelling equal in dimen-

sions to a foetal head; it was regular on its surface, tense, but elastic. By means of an examination per rectum, it was ascertained to consist of the inflamed ovary. Eighteen leeches were immediately applied, she was immersed in a warm bath, and Plummer's pills, James's powder, and opium were given. On the morning of the 16th, the tumefaction had considerably abated, and on the 18th, the tumour could scarcely be detected. No solid lumps came away, nor was there any reason to believe it depended on a fæcal collection; the pulse was quite quiet. From this period absorption appeared to proceed much more rapidly than before, and on the 10th of March she was dismissed, with the pelvic tissues restored to their natural condition."

TREATMENT OF PELVI-PERITONITIS.

Leeches to the abdomen, the constant application of large warm poultices, or moistened spongio-piline, mercurial, and subsequently iodine, ointment, will promote the absorption of adventitious products; for I have several times seen accumulations of false membranes, sufficient to modify considerably the sound on percussion, disappear by degrees, the abdomen resuming its proper sonoreity. I have not found bleeding and leeching, previous to a menstrual period, to prevent the relapse of peritonitis; and I prefer seeking to obviate this by enjoining perfect rest, and the continued application of warm poultices or spongio-piline, sprinkled with from thirty to forty drops of laudanum. It is easy to understand that it might be necessary to open into the vagina the collection of pus, no matter whether originating in pelvi-peritonitis or peri-uterine phlegmon; but I have not had occasion to do so, and I think it better to trust to nature for the due performance of the operation, if it be required.

Hip-baths may be made resolute by dissolving three or four ounces of sub-carbonate of soda into each, the patient taking one a day, remaining in it for an hour if possible. All uterine treatment must be avoided, for I have seen even linseed-tea injections do harm. Dr. Beau's mode of treating general peritonitis might be effectual: he gives eight grains of sulphate of quinine every eight hours. After four or five

doses, deafness and singing in the ears come on, the action of the heart is lowered, and the symptoms of peritonitis are said to abate.

Such are the remedial measures suitable to all types of sub-acute ovaritis, but the patient should be warned that nature, by subjecting her to a periodical return of pain and congestion of the ovaries, renders her liable to returns of a low inflammatory action in the same organs, and that therefore it may be necessary to continue the treatment month after month, to use sedative rectal injections a few days before the return of menstruation, and during the flow, if there be much pain, though at that time warm water should be injected instead of cold.

PREVENTIVE TREATMENT OF SUB-ACUTE OVARITIS.

This it is no less the practitioner's duty to enforce, even though he may not be questioned on it by patients or relatives, ever anxious to throw off the trammels of medicine when they are once relieved from pain. This essential part of practice should be planned so as to fortify the nervous system by diet, exercise, amusements, and tonic medicines; to ensure the avoidance of such causes as I have shown are the most likely to give rise to menstrual disorders in general, and in particular to sub-acute ovaritis—such as cold, emotional stimuli, and in the married, sexual indulgence. The reader will easily deduce the means of successfully preventing the development of ovarian and uterine disease from a careful study of my long chapter on the causes of sub-acute ovaritis, or, if he wishes to see the subject treated at a length proportionate to its importance, I refer him to my *Elements of Health, and Principles of Female Hygiene*.

CHAPTER XXX.

ACUTE OVARITIS.

SYN.—Oophoritis.—Dugès. Vesiculite suppurée—Inflammation of the uterine appendages—Ovarian abscess—Abscess of the broad ligaments—Pelvic tumour.

DEF.—*Considerable painful swelling of the ovaria, and of the surrounding cellular tissue, with formation of pus, which is either disseminated or encysted.*

It is necessary to class and to separate, so as to take stock of what one possesses, but there is no abrupt transition from the acute to the chronic; and if I consider ovarian abscess separately, it is because it has many peculiarities, and requires surgical as well as medical treatment. A pelvic tumour may be the result of inflammation communicated from the cæcum to the surrounding cellular tissue; it may be constituted by the inflamed ovaria and its surrounding cellular tissue, or, on the contrary, it may be formed by an abscess in the cellular tissue subsequent to child-bearing. It may also be sanguineous. The term *Vesiculite suppurée* can only be correct when it is possible to distinguish the three envelopes proper to the vesicle from those of the ovary, which seldom occurs. Although much has been published on most of these varieties of disease, the whole of our information requires to be tested and increased, by numerous cases exhibiting each variety unadulterated by complications. Large maternity hospitals afford an excellent opportunity for doing this, both for puerperal ovaritis, and for pelvic cellulitis. Idiopathic acute ovaritis is a rare disease, and every pathologist must build its history on cases derived from many sources. Excluding those incompletely given, or on which doubts could be entertained, and all those of chronic ovarian tumours, in which suppuration supervened in structures totally different from those of the healthy ovary—cases which have been

erroneously classed with ovarian abscesses—I have collected twenty-four published cases of idiopathic ovarian abscess, capable of being used for this purpose, and adding to them two, which occurred in my own practice, I shall qualify the assertions of authors by the analysis of these twenty-six cases. In twelve out of the twenty-six, a post-mortem examination showed that the ovary was transformed into an abscess, the great probability of this having been the case with many of the other fourteen, rests on the testimony of competent observers. Following the example of the best authorities, I have not separately considered idiopathic and puerperal ovaritis, because the nature, symptoms, and terminations of both diseases are similar, however much the danger of ovaritis may be increased when it arises in the midst of puerperal fever.

PATHOLOGICAL ANATOMY OF ACUTE OVARITIS.

When describing the anatomical lesions of acute ovaritis, one treads on less disputable ground than when speaking of those of the sub-acute form. These lesions are, in themselves, more apparent, and similar to those produced by acute inflammation in other organs. If the inflammatory process has been sufficiently intense, or has not been actively treated, the ovaria in the course of a few days swell to a considerable bulk; and if, by chance, an opportunity be afforded of examining them, the peritoneal covering of the ovaria may be found acutely inflamed, red, vascular, the lymphatics full of pus, and the surface covered with false membranes, or imbedded in lymph, as may be seen in the beautiful delineations of Carswell and Cruveilhier. The ovaria themselves are swollen to three or four times their usual size, are pulpy, of a bright red colour, very vascular, and with a collection of pus in some portions of their tissue. These purulent deposits, scattered through the ovaries, have been described by Négrier, and considered as inflamed Graafian cells, filled with pus of their own secreting. He has given an interesting case, where the rupture of one of these very small purulent cavities, and the diffusion of its contents into the peritoneal cavity, terminated in death. These small cavities may communicate, or the central part of the ovary may be broken,

nothing being left but the ovarian shell, filled with pus ; and if well protected by false membranes, the pus may remain there, without giving signs of its existence.

In twelve out of twenty-six cases of idiopathic ovaritis, a post-mortem examination was made. In seven out of the twelve, the pus was found in the unbroken ovarian shell ; in three, its contents had been emptied into the peritoneum, and had caused general peritonitis ; and in three out of the seven cases, both ovaries contained pus. Haller, Portal, Montault, and Cruveilhier, have related instances of the ovarian abscess containing several pints of pus ; and in the *North American Journal*, 1826, Mr. Taylor has published a case, where it was said to have contained twenty pints ; but I consider this, and similar cases, to be *suppurated ovarian cysts*, and not ovarian abscesses. Acute inflammation often supervenes on chronic ovarian tumours ; this evidently occurred in Portal's case : the tumour is described as still containing steatomatous matter. These collections of pus, if not artificially opened, have a tendency to empty themselves into the neighbouring organs, for they will be found to communicate, by fistulous passages, with various parts of the intestinal canal, with the bladder, the vagina, or the peritoneal cavity. T. Bonnet, Shenkius, Merat, and Dr. Seymour, have related cases, wherein the ovaries were found in a state of gangrene.

It is said, and Dr. H. Bennet has lately repeated the assertion, that inflammatory action generally extends to the cellular tissue contained within the folds of the lateral ligaments. This is only true for puerperal ovaritis, and partly explains the gravity of the disease, but in idiopathic ovaritis, inflammation often remains confined to the ovary ; in seven out of the twelve cases, in which a post-mortem examination was made, the pus was in an unbroken ovarian shell, and it is not mentioned that the surrounding cellular tissue was much implicated in the other five. The coincidence of abscesses in the ovary and the corresponding oviduct, was noticed by Morgagni, and afterwards by Andral, Dalmas, and Hasse. In a post-mortem examination, Cruveilhier found both the ovary and the corresponding Fallopian tube distended with pus, the tube being adherent, and the ovary so softened in

the vicinity of the adhesion, that it would soon have allowed its contents to pass through the tube to the uterus. The ovary is often found partially destroyed, and sometimes entirely so.

The pathological lesions of puerperal ovaritis are sometimes similar to those described. Pus may be found in the ovarian veins, though not so frequently as in the uterine. Cruveilhier considers the lymphatics to be more commonly distended with the pus they have absorbed; and in several of his plates he has shown the deep and superficial lymphatics of the ovaries and broad ligaments replete with purulent fluid. These vessels have been sometimes mistaken for veins; but when the pus is removed from the lymphatics, those structures appear perfectly healthy; whereas, when veins are inflamed, their tissues are thickened, are more fragile, and are lined with false membranes. The change produced by pregnancy in the structure of the ovaries accounts for some other changes frequently found in those of puerperal women; for if the ovaria, when already softened and swollen by that physiological process which had not escaped the notice of Bichât and Roux, are attacked by acute puerperal inflammation, it need not excite wonder if their whole substance should be dissolved into a jelly-like substance without admixture of pus. Morgagni was one of the first to notice this peculiarity—*Epis.* 46. In a woman who died on the thirtieth day after her confinement, he found an abscess formed between the right ovary and the colon, which was the cause of death. The left ovary, although, in size and colour, not differing from one in a healthy condition, was softer than usual, and on being opened was found to consist of a sort of jelly. The same appearance has been since observed by Collins and Cruveilhier.

The size of the tumour is often more considerable, and the stroma loses all trace of organization, being changed into a milky sero-purulent magma, into a greyish sanious matter, or into a vascular pulp, which is almost diffuent, and approaches very nearly to the condition of gangrenous decomposition, since it indicates the total disorganization of the ovarian tissue. In some cases of puerperal metro-peritonitis, Cruveilhier, Boivin, Dugès, and Seymour, have found the diffuent ovaries ruptured, without its being possible to ascribe the

rupture to any violent traction; and the shreds of the organ being mingled with pus and peritoneal effusion, have, no doubt, been described as the result of gangrene by the older authors. In these cases, the ovarian rupture was the cause of the fatal peritonitis. Another important pathological distinction between puerperal and idiopathic ovaritis is, that in the latter the adjacent peritoneum is frequently not extensively inflamed, and may for years form an efficacious boundary to inflammatory action; but in the puerperal variety, the ovarian peritoneum soon participates in, and often originates, the disease—a disease which is the natural sequence of the high susceptibility to morbid action brought on by parturition, and of the increased flow, to the pelvic organs, of blood containing a greater proportion of fibrine than usual. With respect to the comparative frequency of the varieties of puerperal pelvic abscesses, I can only mention that Marchal de Calvi, having collected at random sixteen cases in which the nature of the disease was ascertained by post-mortem examination, found that there had been

	Cases.
Sub-peritoneal abscess in	5
Sub-aponeurotic abscess in	3
Intra-peritoneal abscess in	2
Several intra-peritoneal abscesses in	1
Ovarian abscesses in	2
Mixed abscesses in	3

The frequency of inflammatory lesions of the Fallopian tubes is much greater than is generally believed. It has been overlooked in many pathological problems of which it forms an element. This frequency is confirmed by the testimony of Drs. Ashwell and Cruveilhier; and Dr. Hooper, in the few pages prefacing his admirable delineations of uterine and ovarian disease, says that “the Fallopian tubes are frequently found to have suffered from inflammation.” Their inflammation is almost always a consequence of ovaritis or metritis, and is confounded with these diseases exactly in the same way as Fallopian cysts are confounded with ovarian—a confusion of diseases which, as the same treatment is required in both cases, is indeed of but little consequence. As regards the morbid conditions which have been noticed, the fimbriæ may be

found preternaturally florid, highly vascular, filled with blood, attached by recent false membranes to the ovaries or adjacent organs, or bound down to the same by firm, thick bands of long standing. The Fallopian tube is sometimes much hypertrophied under the influence of inflammation. Meigs once found it much larger than a stout man's thumb, and the finger could freely move in its canal. The fimbriæ of both Fallopian tubes may be destroyed, but in general those only of one or the other are totally wanting. This is a lesion of very frequent occurrence, generally coinciding with the obliteration of that extremity of the tube by which it communicates with the peritoneal cavity. The oviducts then terminate in a *cul-de-sac*, increase in size, become tortuous, or assume a pyriform shape, their walls being thicker than usual, and fluctuating when pressed. On being opened, they are found to contain a serous, albuminous, puriform, or bloody fluid, and their internal surface is covered with tenacious or flocculent albuminous substance, the removal of which exposes tissues which are inflamed and softened. I may here observe, that however frequently obliterations of the Fallopian tubes have been found, their imperforation, whether congenital or accidental, has been very seldom met with. A web of false membranes has been often discovered lining the interior of the oviducts of prostitutes, and of those women who have recovered from puerperal metro-peritonitis; whereas the same tubes are often found full of mucus, or even pus, in those who have died in the acute stage of that disease. In some cases, the internal surface of the oviducts is perfectly healthy, and still they are unable to perform their allotted task, owing to the existence of false membranes, which glue them to the neighbouring viscera, so as to preclude the possibility of their precise adaptation to the ovaries. Varying in density, from that of the finest diaphanous film to that of strong ligamentous bands, these false membranes are of frequent occurrence; and, in prostitutes, if we may rely on the testimony of Walker, Renaudin, and Dr. Oldham, the ovaries and Fallopian tubes are seldom found without some one or other of the lesions already described.

CHAPTER XXXI.

CAUSES AND SYMPTOMS OF ACUTE OVARITIS.

THE causes of the idiopathic and puerperal varieties have been so carefully investigated when treating of sub-acute ovaritis, that I need not again dwell on them, but content myself with observing, that acute ovaritis is produced by the great intensity or continuity of action of the causes of the sub-acute form, by the great liability of chronic ovaritis to become acute from trifling causes, the application of caustic to the neck of the womb, and instrumental interference.

While contending that, in some cases, puerperal pelvic abscesses originate in ovarian inflammation, it would be absurd to attribute them to that cause alone, for the crushing of the pelvic cellular tissue by the child's head, or by instruments, is quite a sufficient cause for suppurative inflammation in the puerperal state. I refer the reader to the chapter on the causes of sub-acute ovaritis, observing, however, that out of my twenty-six cases of idiopathic ovarian abscess, twenty were married or lived connubially, five of the twenty were prostitutes, that all the patients belonged to the reproductive periods of life, eleven being under twenty-five; that the menstrual flow had been for some months more painful in two, more irregular in eleven, and absent in three out of the twenty-six; that the disease originated during menstruation in six cases, and in three under the sudden influence of cold. Once it began soon after a kick on the groin, once after a fall downstairs on the subsidence of the menstrual flow. In four cases it was the immediate consequence of marriage, and in three out of the twenty-six the ovarian abscess seemed to arise in chronic uterine inflammation. Gonorrhœa was the cause in seven cases, in one of which the disease could be traced to cohabitation at a menstrual period; in two to the suppression of the discharge, one woman suddenly suppressing

the gonorrhœal flow by astringent injections, the other by taking a full dose of copaiba.

Ovaritis has this in common with orchitis, that occasionally both may occur in connexion with variola. Dr. Beraud has published—*Archives Générales de Médecine*, Vol. XIII.—three cases, in which, on a post-mortem examination, pus was found in the ovary of a woman who died of variola. Dr. Druitt has seen a case of ovarian abscess for which he could find no other cause than the use of sinapisms to the breasts, to promote the secretion of milk.

SYMPTOMS OF ACUTE OVARITIS.

LOCAL SYMPTOMS.—Pain is one of the first indications of acute ovaritis. This is increased by all movements of the body, particularly by extending the limb of the side affected, but this is common to many varieties of pelvic tumours. The pain varies in intensity, being bearable, or acute. Dr. Ashwell mentions a case where it was so overwhelming, that syncope was induced by the patient's rising in bed to relieve the bladder. The nature of the pain varies, being heavy, dragging, throbbing, or accompanied by a feeling as if a foreign body were boring its way through the vulva. When alarmed by the pain, if one examines the ovarian region, which is its seat, a tumour is sometimes seen distinctly pointing from the side of the pelvis, but one cannot from its absence infer the non-existence of ovarian inflammation, for the enlarged ovary, if free from adhesions, often dips down into the recto-vaginal *cul-de-sac*. The hand detects an increase in the natural heat of the pelvis, of which the patient herself is frequently aware, and pressure increases the pain; there may be also a sense of uneasiness or numbness in the limb corresponding to the seat of the tumour, as in iliac abscess.

By a vaginal exploration this passage will be found hotter than usual, and not lubricated by mucus. Ovarian abscesses, like other pelvic tumours and incipient ovarian cysts, interfere with the same organs, and produce the same local symptoms. The physical means of examination which apply to pelvic tumours, also relate to the detection of ovarian dropsy in its early stage. When the tumour is small, it

may subside between the uterus and the rectum, or between the former organ and the bladder, and in some rare cases, it may not only press on these organs, but actually force down the fundus uteri, causing its prolapsus. If the tumour developes itself behind the uterus, it may press it against and above the pubis, thus producing abnormal deviations by its continued pressure. When the tumour has increased, and is no longer entirely in the vicinity of the vagina, having ascended towards the brim of the pelvis, valuable information respecting its position and nature may be afforded by the finger, though it cannot reach the seat of disease. Thus the tumour may depress the uterus to the right or to the left, or may flatten it against the pubis, causing its complete anteversion, and rendering it impossible for the finger to attain the os uteri. M. Robert of Paris has met with several cases of this description. This cannot take place without elongating the vagina and urethra, altering their form, and interfering with their functions, rendering micturition difficult; and there are patients who can only pass water on reclining their body as much backward as possible. Boivin and Laugier have found it necessary to depress the tumour, in order to pass the catheter; in other cases, a male catheter only can penetrate the bladder; it is sometimes impossible to introduce even this instrument. When one can only just feel the inferior segment of the uterus, its usual mobility may be found checked, or it may be so bound down by false membranes, the result of peritonitis, that it is rendered immoveable. A rectal examination confirms the conclusions of the previous inquiry; and as the double-touch affords a means of establishing an accurate diagnosis of these difficult cases, one can thus guard against mistaking the uterus for an ovarian tumour. When the tumours are small, they are sometimes found in the recto-vaginal space; and, if their contents be liquid, fluctuation can be detected.

In the commencement of acute ovaritis, the dysuria is only sympathetic; but, when the tumour has increased in size, should it fall between the bladder and the uterus, it may give rise, as in the incipient stage of ovarian cysts, to the desire of passing water every minute. If the ovarian tumour becomes still larger, and encroaches on the pelvic cavity, the

bladder will be deviated, and its fundus be pushed forward above the pubes, the catheter will not then pass freely through the elongated urethra. The urine itself should also be carefully examined, for if it contain pus, in a small quantity, it would be unnoticed by the attendants, or considered to be the *whites*. In the early stages of idiopathic ovaritis, nausea, sickness, and sometimes constipation, are frequent accompaniments, depending, at first, on the irritation of the visceral peritoneum, and on the temporary paralysis of the muscular coat of the intestines. When the tumour has increased, and rests on the rectum, the patient is troubled by a more constant constipation, and by tenesmus. The pressure on the rectum is sometimes so great, that the fæces are moulded into the form of a riband. Sometimes constipation is so obstinate that the case is considered to be one of ileus. Thus Rokitanski observes:—"In two instances with which I am familiar, the pressure of the prolapsed ovary, loaded with purulent fluid, produced in each case a fatal form of ileus. In one of these the tumour filled the rectum; neither bougie nor injection could be conveyed beyond it, and such was its apparent solidity, that I did not for a moment contemplate puncturing. But the deception was fatal to the patient. The second case, very similar in all respects to the first, occurred in the practice of a surgeon in the country, who sent me its history, and the morbid parts for examination." This must be carefully borne in mind by the surgeon; for constipation was obstinate in eight out of my twenty-six cases; twice it was mistaken for ileus, and the patients tortured by drastics. If the tumour increases still more, it rises above the brim of the pelvis, and then the lower intestine is no longer so much compressed. It is incumbent on the medical adviser to examine the fæces, as they, like the urine, may contain pus. So imperfect has been our acquaintance with the nature and symptoms of this disease, that many writers have asserted that it is accompanied by nymphomania. Thus, Dr. Copland, speaking of the acute form of idiopathic ovaritis, says, "the mind is more evidently affected in the sanguine, the irritable, and the plethoric; the desires are inordinately excited, so as almost to amount to uteromania;" and Colombat enumerates

inflammation of the ovaria among the causes of nymphomania. But as there are no modern cases on record of the ovarian abscess being attended by such symptoms—as, on the contrary, these symptoms were absent in all cases of acute ovaritis lately observed, and as the cases recorded by the older writers are but loosely given, I am inclined to believe that if, after the symptoms of furor uterinus had been observed, pus was found in the ovaries at the post-mortem examination, these symptoms did not proceed from ovaritis, but from some concomitant irritation of the external organs of generation, or of whatever part of the brain is in peculiar correspondence with the organs of reproduction, and impels to sexual gratification.

GENERAL SYMPTOMS OF ACUTE OVARITIS.—In the first stage of the complaint, they are similar to those which announce the process of suppuration in any deep-seated organs, such as shiverings, followed by fever of a remittent or continued type, particularly when the symptoms of ovaritis merge into the more marked phenomena of acute peritonitis. These were noted in fifteen of my twenty-six cases, fever being marked high in thirteen. In the worst cases, abundant perspirations, violent thirst, diarrhœa, delirium, coma, and insensibility to pain, closed the scene. Frequently, however, the patient amends, and the ovarian swelling diminishes; but, on account of the periodical turgescence of the ovaries, relapses occur, or the inflammatory type lowers, and chronic ovaritis is established.

Dr. Jenner tells me, that in a patient whom he treated at the Fever Hospital for continued fever, an ovarian abscess was the only lesion found on opening the body. It must also be borne in mind, that, as in other organs, so in the ovary, pus may gather without any symptoms to indicate its presence, as in Valleix's case, and as in one of Dr. Tanner's, who remarks, "that prior to the bursting of the abscess the patient only suffered from habitual leucorrhœa, hysteria, and from an habitual aching in the lower part of the abdomen." The permanence of such symptoms shows the urgency of a careful examination, by which means the abscess may be often detected and opened, so as to prevent the fatal effects of its

bursting into the peritoneum. In two instances out of the twenty-six, the patients were said to have been comatose for hours, and then to have come to themselves again ; in one of my cases, the swelling, pain, and sickness were considered to be the symptoms of pregnancy.

CHAPTER XXXII.

TERMINATIONS OF ACUTE OVARITIS.

As in all other organs of the human frame, when inflammation has arrived at suppuration, the pus deposited in the ovaries may be absorbed into, or ejected from, the system.

RESOLUTION.

Contrary to the opinion of Boyer, and those whose memory was particularly impressed with the most fatal consequences of ovaritis, I hold, with Loënhardt, F. Churchill, and others, that resolution is not an uncommon termination of ovaritis. It often occurs as a result of active treatment, when pus is diffused, and infiltrates the tissue of the organ, and has been known to happen when a considerable quantity of pus had collected. Martin Solon—*Dict. de Médecine*—relates a case, wherein fluctuation in the ovarian tumour was so evident, that he had fixed the day for opening it. But, on examining the tumour previous to the operation, he thought it was less than when he had previously explored it; he therefore put off the operation, and nature dispersed the tumour, by absorbing its contents; six of my twenty-six cases terminated by resolution. One is also related by Dr. Chereau:—

CASE 68.—Madeleine —, aged twenty-two, had always enjoyed good health till the age of seventeen. From that period she constantly complained of a feeling of oppression, and a difficulty of breathing, which was aggravated every month. Her catamenial periods were preceded by considerable pain in the lumbar region, twitches in the thighs, weight in the hypogastrium, and colic. She was habitually constipated. In 1840, without any known cause, she was seized with symptoms of inflammation in the abdomen, which, if I may judge by the description of a non-medical person, were those of peritonitis. October 24th, 1842, she had for

two days been suffering from severe pain in the lower part of the abdomen, with a feeling of weight in the groins, and twitches in the thighs and loins. The catamenia were due, but had not appeared. The face was flushed; skin hot, but moist; the pulse was 80, and fuller than natural. She complained of severe headache, difficulty of breathing, and on the previous evening she remarked that her sputa were tinged with blood. No stool for the last forty-eight hours. The abdomen was painful on pressure over its whole extent, but more especially at the left iliac region, where there was a small tumour of the size of a hen's egg; it was somewhat moveable, and very painful to the touch. On examining the chest, pulmonary engorgement of the right lung was discovered, and this was probably occasioned by the presence of tubercles; the left lung was healthy. The patient was copiously bled from the arm; fifteen leeches were applied to the groins; foot-baths, with vinegar, were employed; demulcents, and slightly purgative enemata, were likewise ordered. Under the influence of this antiphlogistic treatment, the headache and difficulty of breathing were much relieved; the catamenia appeared the next day, and continued for three days in a much larger quantity than usual. On the fourth, the swelling of the left iliac region began to diminish, and from that period the patient was completely convalescent. She continued well till the following June, the appearance of the catamenia, however, being always preceded by pains in the bowels. He adds: "I was then requested to see my patient a second time, and found her in a state so similar to that already detailed, that I need only say, that the same treatment was pursued, with the same results."

ELIMINATION.

But when the purulent collection is so considerable that its absorption would be detrimental to the human body, or when the vital powers are inadequate to this task, the pus then works its way out, in accordance with that providential law which gives a centrifugal impulse to all that is noxious in the system. Sometimes the bursting of the abscess occurs without the patient being aware of it; at others, she feels as if something had snapped within her. The abscess may burst, empty

itself, refill, and burst again, and do so repeatedly, as in two cases seen by Chomel, and in one shown me by Dr. Oldham at Guy's Hospital; or, after having emptied itself by one outlet, it may do so by another, or by several at once. In seventeen idiopathic cases out of twenty-six, pus was eliminated from the ovarian abscess. In three cases it burst into the peritoneum, in ten into the rectum, in three into the vagina, in one case an incision allowed its passage into the vagina. In three out of the twenty-six cases, the rupture took place at a menstrual epoch, when there is often an aggravation of symptoms, and sometimes a relapse. The peculiar structure of the ovaries during the puerperal state, explains why puerperal ovaritis so often terminates by elimination of the pus, which took place in sixteen out of seventeen cases of puerperal pelvic abscesses collected by Grisolle. In enumerating the divers outlets contrived for the evacuation of pelvic tumours, I shall distinguish those which open externally, whether directly or indirectly, on to the skin, or into the vaginal, intestinal, or vesical outlets, and those which open internally, as into the peritoneal cavity.

CUTANEOUS OPENING.

Ovarian abscesses seldom seek this vent. It did not occur in any of my cases of idiopathic ovaritis; it was more frequent in the puerperal variety, but less so than with iliac abscesses. When they open on the surface of the skin, the opening usually takes place in one of the iliac regions; as the abscesses have generally attained a large size, the prognosis is unfavourable. Montault describes a case, wherein the pus, being conducted by the round ligament, passed through the inguinal canal.

VAGINAL OPENING.

This is a frequent and felicitous termination of ovarian abscesses, which void their contents through the medium of the Fallopian tubes and the uterus, or more frequently by direct communication with the vagina. An instance of the first is mentioned—*Mémoires de l'Académie des Sciences*, 1700:—A nun, who had never menstruated, committed suicide, and, on a post-mortem examination, pus, with hair

embedded in a fatty substance, was found in one of the ovaries; the corresponding Fallopian tube, communicating with the ovarian cavity, was full of pus, and emptied itself into the uterus and the vagina. Cruveilhier, on dissecting a body, found the contents of a purulent cyst on the eve of passing through the oviduct into the uterus. On detaching the fimbriated extremity from the ovary, pus issued from the Fallopian tube which had contained it, and on pressing the tube in the direction of the uterus, the matter also flowed from the uterine orifice of the oviduct. Madame Boivin mentions having seen an undoubted case of pus passing from the ovary by the Fallopian tube into the cavity of the uterus; there was no other means of explaining the sudden discharge of two glassfuls of viscid greenish pus, which flowed unmixed from the os uteri, to the great relief of the patient. Chaubon described such cases in his treatise on *Diseases of Women*; and I have given a case (48) wherein Vidal de Cassis believed a similar communication to have taken place.

Dr. M'Intyre informed me that he had had under his care a lady, thirty-five years of age, in whom acute ovaritis manifested itself without any appreciable cause: the abscess burst, and for several days a considerable quantity of green foetid pus was passed by the vagina; the patient then recovered. These causes must, however, be considered exceptional, for the pus is generally voided by a direct communication between the abscess and the vagina, although it may be difficult to detect even by a specular examination where the opening took place. This termination has been frequently met with by both English and Continental practitioners, and has pointed out the best mode of treatment to which we can possibly resort in similar cases. Dr. Bennet has never seen a simply inflammatory ovarian abscess which did not heal, and he thinks that when it bursts repeatedly the abscess may be considered tuberculous. Sometimes the ovarian abscess will communicate with various surfaces of the human body. This will be seen in some of the cases I shall relate; but one of the most interesting is mentioned by Dugast, who met with it when dissecting the body of a woman who died of consumption. He found the left ovary, about the size of a hen's egg, adhering by one of its extremities to

the sigmoid flexure of the colon, and by the other, to the uterus. The intestine communicated with a tuberculous abscess of the ovary; and where the ovarian tumour was attached to the uterus, the tissue of the latter was softened to such an extent, that a similar communication between the ovarian abscess and the uterus would have shortly taken place; so that, if the patient had lived a little longer, the *fæces* would inevitably have passed into the ovarian abscess, and thence into the uterus, and would thus probably have been voided by the vagina. This termination only occurred in three of my twenty-six idiopathic cases, or much less frequently than in the puerperal variety.

INTESTINAL OPENING.

Although it has been affirmed by Velpeau and others that this termination is as favourable as that wherein the pus is passed by the vagina, the assertion is not borne out by facts; and it stands to reason that the prolonged passage of pus from the vagina must be less prejudicial to the system than the protracted contact of this fluid with the internal surface of the intestine, the entire mucous coat of which is more or less devoted to the absorption of what is to renew the frame. In these cases, though the cure of the ovarian abscess may progress favourably, still the patient may sink from the debilitating influence of colliquative diarrhœa. Of the ten patients in whom the abscess burst in the rectum, after prolonged suffering, one died of intestinal ulceration, and another had not recovered her strength after eighteen months' illness. It follows as a consequence of what I have stated, that the higher the opening into the intestinal cavity is situated, the greater will be the danger; and that there is a better chance of cure in cases of rectal communication—Andral, Nauche, Boivin, Montault, Imbert, and Velpeau—than in those where the abscess communicates with the cæcum or the colon. One must, however, bear in mind, that, in communications between ovarian abscesses and the intestines, the opening has sometimes a valvular disposition, so that, although the pus can enter the intestines, the contents of the intestine cannot obtain ingress to the cyst. I append a case published by Mr. Bartrum of Bath.

CASE 69.—Four months before the death of a patient, thirty-two years old, her belly swelled, and from that circumstance, as well as from severe pain occasionally felt in the bowels, she imagined herself pregnant. A month before her death, she felt a sensation as if something had burst internally, which she likened to the explosion of a pistol. This was followed by vomiting, constipation, and death; and on opening the body, an abscess was found in the left ovary, with an opening, by which it communicated with the sigmoid flexure of the colon.

VESICAL OPENING.

Communications of abscesses with the bladder are not of frequent occurrence, but have, nevertheless, been observed by Dupuytren, Husson, Dance, Martin, C. Hawkins, H. J. Johnson, and Dr. Gordon. Two cases will be found in the *British Medical Journal*, September, 1853—One under the care of Mr. Mellard of Manchester, made a good recovery, the other reported by Mr. John Windsor, ended fatally. In many instances, the passage of pus to the bladder gave rise to no irritation, and the urine did not seek to escape from the bladder into the areolar tissue. In Dr. Gordon's case, the pus came from an ovarian puerperal abscess; and probably from an idiopathic ovarian abscess in Dupuytren's.

PERITONEAL OPENING.

The peritoneum is often an effectual boundary to the inflammatory process established in the subjacent organs; still it sometimes happens, particularly in the puerperal state, that inflammation passes from the ovaries to the serous membrane which covers them.

I have already inquired into the various effects of local peritonitis, and though general peritonitis seldom occurs, its fatality prompts a careful consideration of whatever may cause it. General peritonitis is the result of the effusion of pus or of blood from the ovaries, and from the Fallopian tubes. The vicinity of the ovarian abscess to the peritoneum would lead me to infer that the former frequently empties itself into the latter; and if this seldom takes place, it is an additional proof of the operation of that conservative prin-

ciple which protects our frame. I know that under other circumstances pus may be effused into the peritoneum, may become circumscribed or isolated by false membranes, and be partially or altogether absorbed in course of time; but I do not remember an instance of the patient's recovery after the effusion of *ovarian* pus into the peritoneum. It was fatal in three out of my twenty-six cases in which it occurred, and in two others, the lesions of general and acute peritonitis were found after death. Dr. Churchill states that the escape of pus into the peritoneum, where it gives rise to peritonitis, is always alarming, but not always fatal; and he refers to three of the cases he has detailed, but which do not seem to prove his position, for in these there is no evidence of pus having been effused into the peritoneum. The fatal results of purulent effusion into the peritoneum do not depend on the amount of pus effused, but on the irritating nature of the fluid; for in Négrier's case the abscess was very small. And here I will remark how very different is the prognosis in cases of rupture of ovarian cysts, with effusion of their contents into the peritoneum, provided they contain only a bland albuminous fluid. I believe I was the first to establish, by statistical tables, the innocuousness of this accident, in my papers on ovarian dropsy, published in the *Lancet*—1848—and subsequently in the *Lond. Med. Gaz.*, and I am glad to find that my conclusions have been fully confirmed by Prof. Simpson—*Edin. Monthly J. of Med.*, Dec., 1852. With respect to hemorrhage from the ovaries producing peritonitis, I think this occurred from rupture of the softened and highly vascular stroma, in those post-mortem examinations where the shreds of the ovaries were found in the abdomen mingled with sanious pus. Dr. Barnes has published a fatal case of peritonitis caused by *putrid matter* passing from the oviducts into the peritoneum soon after abortion by the use of a cutting instrument. Late German writers call the disease salpingitis; and observe that this rare disease only occurs in the puerperal state. In three of my twenty-six cases, young married women, previously fruitful, remained sterile after acute ovaritis. Pistocchi mentions, that in one of his patients, after acute ovaritis, there was an absence of sexual desire, which had previously existed.

CHAPTER XXXIII.

DIAGNOSIS AND PROGNOSIS OF ACUTE OVARITIS.

THE difficulties of abdominal diagnosis are so fully admitted, that attempts have been lately made by Drs. Williams and Ballard to give it greater precision.

I. When an ovarian abscess exists, a circumscribed tumour will be felt on one side of the pelvis, by means of a vaginal or a rectal examination. I shall indicate some exceptional cases.

II. The areolar tissue surrounding our organs generally limits the pathological influences to which they are liable; thus, inflammation of the cæcum seldom originates a pelvic abscess, neither does an ovarian abscess when it is idiopathic. In cases of puerperal ovaritis, on the contrary, inflammation, originating in the ovary, is frequently transmitted to the surrounding cellular tissue, and a pelvic abscess is discovered, by its pointing externally when it is large, and, when small, by an accurate investigation after the subsidence of general symptoms; so that, while puerperal ovaritis is generally imbedded in suppurating tissues attached to the pelvis, idiopathic ovaritis, on the contrary, is globular, moveable, and somewhat *detached* from the pelvis. It should not only be globular, but feel doughy, elastic, or give a sensation of fluctuation, to be best felt by introducing both indicators, one into the vagina and the other into the rectum.

III. The tumour should have a certain degree of mobility, for it stands to reason, that if any space can be felt to exist between a circumscribed tumour and the iliac bone, it cannot be an iliac abscess. These are the physical signs of an ovarian abscess, supposing it be not possible to detect it through the abdominal walls; and I shall now show how its diagnosis may be complicated by disease of the neighbouring organs.

METRITIS SIMULATES OVARIAN ABSCESS.—On the first appearance of the symptoms of idiopathic ovaritis, the patient is generally supposed to be suffering from metritis, and unless a careful examination be made, or the practitioner's attention be drawn to pus having been passed by the vagina or by the rectum, the patient is treated for that complaint. Thus Portal observed, that patients are often met with whose symptoms have been attributed to inflammation of the uterus, but who, after a lapse of time, and subsequent to their apparent recovery, become the subjects of fulness and great intumescence in one or in both of the iliac regions; on inspecting the bodies of such persons, the uterus is found healthy, while the ovaries and ligaments are diseased. Metritis is, however, attended by a greater amount of fever than ovaritis; there is more sickness, and the tumour can generally be detected occupying a central position above the pubis. The pain is more constant, lancinating, and unaccompanied by those far-spreading radiations which are so frequent in ovaritis; still, the difficulty can only be solved by a minute investigation. The regularly swollen central tumour felt by the finger to be a continuation of the neck of the womb, will not permit metritis to be confounded with ovaritis, except the womb had been bound down by previous inflammation to one side of the pelvis, in which case the finger would detect its absence from its central position. Defective involution of the womb, which is far from uncommon, may, when not confined to a central position, be mistaken for an ovarian swelling. The shrewdest and most experienced may be deceived, as in the following instance, abridged from that related by Prof. Pistocchi.

CASE 70.—A strong, healthy woman, who had all her life been subjected with impunity to every vicissitude of weather, and in whom menstruation had been always regular, suffered repeatedly from flooding, but as she was then fifty, she allowed this to go on for three months, till pain in the hypogastric region, and other symptoms of peritonitis became so violent, that she was obliged to seek advice. She was relieved by nine ounces of blood being taken from the arm, emollient enemata, and fomentations. Another bleeding to the same amount, and the application of numerous leeches to

the inguinal regions, diminished the intensity of her suffering, and permitted the hand to detect a solid globular and moveable tumour, occupying a central situation, and dipping into the pelvis. On a vaginal examination, the neck of the womb was found greatly increased in size, and, in moving it, the fingers moved the tumour. Her state improved, and Prof. Pistocchi hoped that all danger was passed, when, on the twenty-eighth day of illness, rigors and other symptoms of suppurative fever came on, and on the forty-sixth day she died. On opening the abdomen, signs of general peritonitis were found, and an oval tumour, ten centimètres long and seven broad; its apex was the womb in its natural position, and the free end of the tumour was constituted by the agglutination of both ovaries above the fundus of the womb, the right ovary presenting in front, and the left behind it, the whole being united by false membranes. Both ovaries contained six ounces of green pus, and their tissue was so destroyed that in some places the peritoneum alone remained.

If the patient had recovered sufficiently to permit a careful local examination, the case must have been considered uterine. Nothing would have been detected but a central tumour, evidently forming one with the womb; adding to this the enlarged neck of the womb, and the continued menorrhagia, what more was wanted to diagnose uterine disease? After bearing children during the first years of marriage, connexion became painful, hysterical symptoms appeared, and pregnancy ceased; she suffered long from uterine disease, and at the cessation of menstruation ovaritis supervened.

A PERMANENT DEVIATION OF THE WOMB is susceptible of being subtracted from the morbid problem by means of the uterine sound, should great local pain cause the deviation to be ascertained. Nonat affirms—*Gaz. des Hôpitaux*, March 5, 1850—that he has seen phlegmasia of the broad ligaments confounded with uterine neuralgia, and that, in one of his patients at *l'Hôpital Cochin*, the neck of the womb had been slit to cure this affection.

ILIAC ABSCESS SIMULATES ACUTE OVARITIS.—This so frequently occurs, that iliac is almost always confounded with pelvic abscess, a common complaint. Valleix mentions, as an instance of their frequency, that M. Fauvel, in his female

ward—not a lying-in ward—at the Hôtel Dieu of Paris, had met with twenty cases in a short space of time. Dr. F. Churchill also says, that abscesses of the uterine appendages are much more common than has been supposed, and adds, that since publishing his paper in the *Dublin Medical Journal*, he has seen twelve instances in unmarried as well as in married women. If these diseases are so frequently confounded, it is because they arise in the midst of similar acute abdominal symptoms, and both occupy a lateral position in the pelvis, and cause uneasiness of the limb of the side affected; but notwithstanding Dr. Battersby's assertion, that no information can be drawn from the position of the limb, because its retraction and the impossibility of extending it is common to so many affections, I have found, like most of those who have written on the subject, that, although in both complaints the free motion of the limb was impeded, its marked retraction and semiflexion coincided with pelvic abscess. It is in these cases, and not in ovaritis, that Berard and Bricheteau have seen idiopathic coxalgia so simulated, that the diagnosis was only made clear by the passage of pus by the rectum. Great numbness and temporary paraplegia have been seen by Nonat to accompany pelvic abscess. Dr. F. Churchill has suggested that "if the swelling be low in the pelvis the patient is unable to straighten the limb on that side, but that this difficulty is not felt when the swelling rises above the pelvis." I have not found this to be the case. A digital examination will, in general, clear the doubts left by the inspection of the patient, for while an idiopathic ovarian abscess is felt as a globular, circumscribed, and somewhat moveable tumour, iliac abscess, on the contrary, feels like a boggy infiltration of the cellular tissue lining the iliac bone, and circumscribing the walls of the rectum and vagina, to which it sometimes gives the consistency of brawn, and the limits of the swelling are indistinct. While an ovarian abscess is seldom larger than a good-sized orange, iliac abscesses often fill the pelvis, and rise visibly above its brim. Still the most experienced may be puzzled, as in a case related by M. Barth to the *Société Médicale d'Observation* of Paris, wherein a pelvic tumour sent into the vagina a prolongation which filled it half-way, and if an abscess arises in an ovary

bound down by previous inflammation to the sides of the pelvis, it will neither be round nor detached from the pelvis. It will be remarked, that I have had in view the diagnosis of idiopathic ovaritis, as, for evident reasons, it will in general be impossible to affirm that a puerperal pelvic abscess is caused by ovaritis.

PSOAS ABSCESS MAY SIMULATE OVARIAN ABSCESS.—This disease frequently arises after a snap; the pain across the loins, the difficulty of straightening the spine, the pain on walking, the uneasiness and swelling of the limb, should prevent a mistake.

PELVI-PERITONITIS MAY SIMULATE OVARIAN ABSCESS.—How frequently this occurs in the pelvic cavity, in the vicinity of the ovaries, has been already noticed, but should tumefaction be detected by an external or internal examination, it will be found diffuse, and the hand will pass insensibly from the inflamed to the sound tissues. If, however, in consequence of partial peritonitis, pus or false membrane become circumscribed in the recto-vaginal pouch, the diagnosis is extremely difficult. Acute symptoms will warn the practitioner that inflammation is at work, and even the most careful investigators would probably take the tumour for an inflamed ovary fallen and confined in the recto-vagina pouch. If the pus obtain exit by the vagina it would confirm the diagnosis. A case of this description occurred lately at St. Bartholomew's, and baffled the sagacity of all who saw it. The disease was caused by the sudden passage from a regular course of life to one wherein the generative organs were abusively used. The patient appeared to be five months gone with child, but she menstruated regularly, and the uterine sound showed the womb to be unimpregnated. It was thought a case of extra-uterine pregnancy by some, an ovarian cyst by Dr. West; and Mr. Stanley owned he knew not what it was. An exploratory needle brought away pus; the abscess was tapped, but still it ruptured internally six days after, and killed the patient. The abscess was ascertained to have arisen between the rectum, the vagina, and ovaries. The left ovary was healthy, but it is said—*Lancet*, Nov. 2, 1850—that the "right was rather large, and contained several cavities which would have admitted a pea;

these were well defined, and were filled with a yellowish-white cheesy substance, like softened tubercles; they were the result of the natural but over-excited functions of the parts," or, in other words, ovaritis brought on peritonitis.

SANGUINEOUS PELVIC TUMOURS MAY SIMULATE OVARIAN ABSCESSSES.—When sanguineous pelvic tumours are small, and fill the recto-vaginal space like a ball, the mistake can be understood, particularly as both diseases often arise in the midst of menstrual disturbance. At this early stage of the complaint, if the tumour be sanguineous, an exploratory puncture will bring away blood instead of pus, and if the tumour very suddenly enlarges and causes an anæmic appearance, it cannot be ovaritis. In ovaritis the symptoms increase gradually from the beginning, while in hæmatocele the most distressing symptoms come suddenly, and subside gradually.

STERCORAL TUMOURS SIMULATE OVARIAN ABSCESSSES.—A stercoral tumour sometimes assumes a globular form; it may be somewhat moveable on one side of the pelvis, and may be extremely painful; but flatus, vomiting, diarrhœa, or constipation, must have existed some time previous to the appearance of the tumour, which may be dispersed, and shown to be stercoral, by a purgative treatment, and by copious injections per rectum. I have shown how much more frequently than is generally supposed, idiopathic ovaritis, by pressing on some part of the lower intestine, causes constipation, so obstinate that the case is considered to be ileus. Constipation was obstinate in seven out of twenty-six cases; ileus was diagnosticated in two cases out of the seven. The following is one of the two, which I condense from the *Gaz. des Hôp.*, March 18, 1852:—

CASE 71.—A delicate-looking woman entered the Hôtel Dieu, Dec. 17, 1851. She first menstruated at thirteen, had a child eight years before she came to the hospital, and menstruation continued regular until the previous year, when it became irregular, and instead of its appearing, the patient suffered from fever, with great constipation and abdominal pains, which were most intense in the right iliac region, where there was a swelling. A pill containing one-fifth of a drop of croton oil was given every hour, a bladder of iced water

was kept on the abdomen, cold water was injected per rectum, and twenty leeches were applied to the right side. This treatment caused copious evacuations, and on the 19th the swelling on the right side had nearly subsided, and the pulse was subdued; fifteen more leeches were applied, and the same measures continued. On the 27th the menstrual flow appeared abundantly, but brought no relief; on the contrary, after some increase of abdominal suffering, green vomiting came on, with agonizing pain in the left iliac region, and meteorismus. Thirty leeches were applied to the left iliac region, and mercurial applications and opium were given until they affected the system. These symptoms lasted, with alternations of constipation and diarrhœa, until January 13, when a swelling in the left iliac region became visible, and the finger, whether in the vagina or rectum, felt the tumour filling the left side of the pelvic cavity. She then had nightly perspirations, and aphthæ, and died February 23rd. On opening the body, the extensive agglutination of the intestines showed general peritonitis, and there was a well-circumscribed peritoneal abscess, which opened into the rectum by three perforations. Where the rectum joins the sigmoid flexure of the colon, a round tumour, about the size of an orange, pressed the gut, *to which it intimately adhered*. This was the left ovary, hard but fluctuating, and it was a multilocular abscess full of green pus. The right ovary was healthy, but adhered firmly to the rectum; the uterus was small and sound, and formed one with the ovarian abscess. An inspection of the body could alone clear up the obscurity of this case. The ovarian abscess, by pressing on the rectum, caused the constipation and the stercoral enlargement in the right iliac region which led Chomel astray. It caused the intestinal perforations; but as these often occur as a result of tubercular disease, and as the patient suffered from cough towards the end of her complaint, a careful search was made for tubercles; none were found, and the intestinal perforation can be only understood as the result of a communication of inflammation from the tumour to the intestine on which it pressed, and which was, moreover, much increased for several days by drastic purgatives, and then by the menstrual molimen. With regard to the cause of the complaint, the case at least shows what may

sometimes be expected as a consequence of the long-continued neglect of menstrual irregularities. The cold water enemata, and ice applied to the abdomen, were more calculated to increase acute ovarian inflammation than to combat it, while the croton oil may have added fuel to fire.

PROGNOSIS OF ACUTE OVARITIS.

The greatest obscurity reigns over this subject, because, in general, the most dangerous cases are alone recorded.

Nothing is known relative to the mortality of patients affected with puerperal ovaritis uncomplicated by other morbid lesions; all such cases being confounded with every other variety of pelvic tumours. Montault, judging from three cases of ovaritis uncomplicated by *other* puerperal complaints, considered their prognosis less alarming than that of iliac abscesses, inasmuch as none of the three patients died. Dr. Bell found twenty-three deaths out of ninety-three recorded cases of pelvic tumours, most of which were puerperal. Marchal de Calvi states that, out of the fifty cases of puerperal pelvic tumours he collected, thirteen were fatal. Of Dr. Fauvel's twenty cases of pelvic tumours none were fatal, although several opened either into the rectum or the vagina.

With respect to the prognosis of idiopathic ovarian abscess, I have twelve fatal cases out of twenty-six; but then it must be borne in mind that I purposely avoided including in my list those of acute ovaritis about which there could be a doubt. I think, however, that the mortality of acute ovaritis is greater than is generally admitted, and the danger of an ovarian abscess bursting into the peritoneum, instead of into the vagina and rectum, is as one to four. This will cause the practitioner to give a guarded prognosis; it will further convince him of the necessity of a minute investigation of those cases which are so frequently set down as inflammation of the bowels, as metritis, or even intestinal obstruction; and, if the case be ovaritis, the disease may indeed last as long as the menstrual function, from which it may receive a monthly aggravation. Should it turn out otherwise, the medical adviser will then earn more credit than he really deserves—a benefit to which he is fairly entitled, as some compensation for the blame he is often obliged to bear when he has done

his best. The practitioner should not despair, even when the case has been long protracted, for one of Mr. Wainwright's cases of pelvic abscess, which was only opened a year after the confinement in which it originated, finally healed at the end of the tenth month, after bursting at intervals during that period.

ABSCCESS OF THE FALLOPIAN TUBES.

At the period of puberty, considerable changes are induced in these organs, independently of the sanguineous congestion spoken of above. At the catamenial periods, the Fallopian tube with its fimbriated extremities is raised, whilst the pavilion proceeds to encompass the ovary and spread itself over one part of its exterior surface. I have ascertained these changes by examination, and several persons have remarked the same in cases of hysterical, as well as of pregnant women. So say Dugès and Mme. Boivin; and I recal the circumstance of the frequent adaptation of the Fallopian calyx to the ovary, as explicative to a certain extent of those cases wherein inflammation renders permanent an otherwise temporary union. I have already shown that inflammation of the Fallopian tubes is extremely frequent, and that it entails sterility by intercepting the means of communication between the ovaries and the womb; indeed, inflammation so frequently leads to obliteration of their distal ends, that some anatomists of the seventeenth century considered this to be their normal condition. The adhesion of the oviducts to the ovary by a false membrane is also very common, and is a result of the extension of inflammation spreading to the fimbriated extremities, causing peritonitis and the exudation of those false membranes by which the oviduct and ovary become intimately and permanently connected. The structure of the Fallopian tubes is sufficient to explain their liability to inflammation; for anatomists tell us that no adequate notion can be formed of the richness of their blood-supply, until, after a successful injection, the parts have been dried in balsam. The blood-vessels are then seen converging towards the fimbriæ, upon and in the substance of which they lie as thickly as the pile on velvet,—an exuberance of vessels which led Hunter to believe that the oviducts possessed an erectile tissue, similar to the corpus cavernosum.

It will be seen by the following cases that, if it be extremely difficult to distinguish a small abscess of the oviduct from sub-acute ovaritis, it is just as easy to confound a larger collection of pus in the oviduct with an ovarian abscess. The following case is recorded by Mr. Harrison, *American Jour. of Med. Science*, Vol. XV. :—

CASE 72.—May 18th, 1834, I was requested to meet Dr. Talbot in the case of Mrs. T., who had been ill for two or three weeks. I found her with fever, hot skin, and a quick small pulse—tongue with a slight fur upon it—bowels easily acted on by medicine—stomach affected with incessant nausea, and incapability of retaining either medicine or food. There was a tumour in the left iliac fossa, just below the anterior-superior spinous process of the ilium, which was not very painful on the application of the fingers. There was great pain in the sacrum and down the left thigh. Agony was produced by the introduction of the pipe of the syringe into the rectum, and there was much difficulty in administering an enema successfully, from some obstruction in the gut, either from a diseased condition of its coats, or from some adventitious body pressing on and diminishing its calibre. Upon examination per vaginam, I found the os tinæ tumid and irritable, the lady complaining greatly on pressure of the finger on the part. She was of a delicate frame of body, but had always enjoyed excellent health until within the last two months. She had been married six months, and had menstruated regularly up to this period ; but, during the last two catamenial efforts, she experienced considerable pain, and shortly subsequent to the last the tumour made its appearance. She passed through two periods without any additional pain ; the fluid discharged at each time was healthy in its aspect, except that it was not so highly coloured, and it was diminished in quantity. In a few days after my last visit she died. Upon opening the abdomen, the stomach was found entirely natural in its appearance, the mesenteric glands were enlarged, and the lungs contained some miliary and aggregated tubercles, but not in a state of suppuration. Both Fallopian tubes were enlarged, especially the left, which was much distended, and prominently pushed upwards, the fimbriated extremity being adherent to the left ovarium. The ovaria were enlarged,

and a copious deposition of coagulable lymph had formed a mass of morbid substance between the ovaria, which matted them together, and which was firmly united to the rectum, and pressed upon that gut. There was about an ounce of pus in the left Fallopian tube, and about three drachms in the right tube. The tubes were impervious to a small probe from the uterus. The os tincæ was tumefied and red, and there was a slight lining of pus on the internal surface of the uterus. The rectum and bladder were both implicated in part in the morbid action of the uterine apparatus, their coats being thickened or hypertrophied. Here is another instance of the persistence of a menstrual *show*, when all communication was effectually stopped between the ovaries and the womb.

Another instance of the difficulty of distinguishing a Fallopian from an ovarian abscess will be found at page 634 of Aran's work.

Dr. Meigs records—page 325—an instance of puerperal fever probably originating in this disease.

CASE 73.—I attended a lady in her accouchement in June, 1841. She had a favourable labour, and all the usual circumstances of a lying-in woman attended her for a period of several hours, when she complained of a heavy and distressing pain in the region of the right Fallopian tube. Suddenly the pain began to spread over the lower belly, and the constitution evinced its participation. The pulse became alarmingly excited and accelerated, and she was soon seen to be far gone in puerperal peritonitis. As she had complained of pain in the right side for some time before the accouchement, I feared that some local malady, suddenly aggravated, was at the foundation of the danger. She died; and, upon inspecting the abdominal cavity, much pus and sero-pus were observed. But what most particularly struck me was the state of the Fallopian tube, which was much larger than a stout man's thumb; and its cavity, which would freely admit of the introduction of a finger into the tube, had been filled with pus. I have little doubt that acute inflammation of the tube, sealing the ovarian extremity of it, and afterwards filling and greatly distending its calibre with pus, discharged at length into the belly, is the true rationale of this fatal attack.

As an example of acute-peritonitis from rupture of a Fallopian abscess, I extract from the *Journal Hebdomadaire*—Tom. I. p. 114—a case published by M. Dalmas, wherein this form of disease most probably followed ovaritis.

CASE 74.—Marie D., aged thirty-seven, the mother of three children, the youngest of whom was seventeen, entered La Charité on the 2nd of September, 1828, having always enjoyed good health until within the previous six months. She first complained of constipation, with pain in the right iliac region; afterwards of darting pains in the right thigh, of sickness, and of colics. In the previous month, she felt pain in the left iliac region, and was conscious of a tumour rising from that spot, causing a painful numbness on the corresponding side. M. Andral distinctly felt the tumour, about the size of an apple; it was painful on pressure, and he considered it ovarian. The left limb was weak, particularly on walking: vomiting and colic came on every day, at irregular intervals. M. Andral applied twenty leeches over the tumour, at three different times. On the 6th and 7th of September the catamenia appeared, and on their appearance the vomiting and constipation ceased. These symptoms, however, returned, the pain in the right thigh reappeared, and on the 29th of September the catamenia again began to flow. The patient became worse, diarrhœa supervened, weakness increased, and she died on the 9th of October. Considerable purulent effusion, and false membranes, were found in the abdomen. To the left was a tumour, intimately connected with the rectum, which, on being opened, showed a circular perforation, about as large as a goose-quill, communicating with the tumour; this, on pressure, became more evident, for pus was seen to pass from the tumour into the rectum. It was afterwards found that this tumour was nothing more than the Fallopian tube, considerably dilated, and in a state of suppuration. That portion of the tube which still retained its ordinary appearance, did not communicate with the interior of the tumour by a small aperture, but by a *funnel-shaped* prolongation of the tube. Behind this was a smaller tumour, which proved to be the ovary, by its fibrous coat and general appearance. It also contained pus, but there was no communication between the purulent cavities. On the right side of the uterus, an inverse disposition was observed. The

right ovary, which formed the principal part of the tumour, was about the size of a hen's egg, and full of thick green pus. The right Fallopian tube was also gradually increased in size, and from the uterus to its extremity was inflamed, and contained pus, but the womb and the bladder were perfectly healthy.

This case is suggestive of many reflections. First the right and then the left ovary became subject to an inflammation which was transmitted to the Fallopian tubes, but no cause can be ascribed to the inflammation of the ovaries. Menstruation was deranged, and then suppressed ; but, even when the ovaries and Fallopian tubes must have been in an advanced state of disorganization, how was it that the menstrual flow appeared twice previous to the patient's death? It proves that, when in woman a hemorrhagic habit has been set up by menstruation, it may again appear, in the absence even of the accustomed ovarian stimulus. Is not man subject to periodical hemorrhoidal or other hemorrhages? This observation no more proves the uterus to be the seat and organ of menstruation, than the flowing of blood from an ulcer at the monthly epoch, shows its diseased surface to be the seat of menstruation. Dr. Pauly relates the case of a woman who presented an accidental and complete occlusion of the vagina, the consequence of a laborious confinement. She was two months at the hospital, during which time she menstruated twice, with violent pains resembling those of metro-peritonitis. At both epochs she was examined with the speculum, and it was easy to see the blood perspiring from the whole vaginal cavity. I have thus shown that collections of pus in the Fallopian tubes may burst, and pour their contents into the peritoneal cavity, or into the womb and adjacent organs ; the pus may likewise be effused into the sub-peritoneal cellular tissue of the broad ligaments, and then travel to a great distance. The causes of inflammation of the Fallopian tubes are the transmission of inflammation from the ovaries, as in the preceding cases, or from the womb, as in the following, related by Mme. Boivin :—

CASE 75.—A woman, after a recent abortion, suffered from inflammation of the uterus and the peritoneum, of

which she died. The ovarian extremity of the left Fallopian tube was of the size of a small hen's egg, and adhered to the ovarium, which it almost surrounded; it was red, very vascular, and contained some fluid blood; the parietes of this sac were half a line in thickness; the right Fallopian tube was obliterated at its dilated extremity, which was as large as the finger, without fimbriæ, and adhering to the ovarium by membranous adhesions; some fluid blood was found within it; the remains of a small lacerated serous cyst were suspended from the ovary on the same side. In other cases, the retention of the menstrual flow seems to have been the cause of inflammation of the Fallopian tubes; their canal has been found much larger than usual, and ruptured in one or more places, as if by the pressure of the retained blood. Several examples of this occurrence will be found in the chapter on hæmatocele. The oviduct may be obliterated at both extremities, and its inflamed surface may be distended with pus or blood, forming a tumour which cannot be distinguished from an ovarian abscess, and which, like an ovarian abscess, has been known to empty itself by an opening through the abdominal parietes, or into the peritoneal cavity. It appears that such cases have been met with by De Haen—*Ratio Medendi*; Heyfelder—*Rust's Handbook of Surgery*; Orde—*Lond. Med. and Surgical Journal*, 1834; W. Adams—*Amer. Journal of Science*, 1826; *Actes des Erudits de Leipsick*, anno 1693; Ruysch's *Observationes Anatomico-Pathologicæ*; Hufeland's *Journal*, Nov., 1819.

CHAPTER XXXIV.

TREATMENT OF ACUTE OVARITIS.

THE treatment of acute ovaritis is often applicable to pelvic abscesses in the iliac fossa, with which it is confounded, so that the following observations apply to a large number of difficult cases.

It is necessary to bear in mind, that resolution may take place after the formation of pus in the ovary, even after fluctuation has become apparent, as in Dr. Martin Solon's case. Valleix has seen another instance of resolution of acute ovaritis in a woman sixty years old. "The two first days," says this pathologist, "I found a tumour having six or seven centimètres in diameter in the right iliac fossa, and so placed as not to admit of any interval between it and the iliac bone. The tumour was so *immovable* that I considered it an instance of phlegmonous inflammation of the iliac fossa not yet arrived at suppuration: but a little later it became distinctly limited, assumed an ovoid form, and *left an elastic substance* between it and the iliac bone. The following days the tumour diminished, so much so, that in ten or twelve days it had completely disappeared, without any evacuation."

Having to contend with an acute inflammation menacing extension to vital parts, its intensity, and the fever by which it is accompanied, must be reduced by general, as well as by local measures.

BLEEDING.—On the Continent, and particularly in France and Italy, it is the common practice to combat the high fever which accompanies the local symptoms by copious venesections. The veins of the arms are those chosen to relieve the circulating system, according to the old and not to be despised doctrine of derivation. This was also the English practice, some thirty years back, and torrents of blood flowed at all our hospitals. Now, however, venesection is but

seldom practised, even in cases of acute rheumatism, or of equally severe inflammation, and it is a question whether we do not err by this opposite extreme—whether the duration of many diseases could not be shortened by returning to the practice of moderate bleeding, in addition to other therapeutical resources. With respect to acute ovaritis, it is well to bear in mind that in six of my twenty-six cases, wherein acute ovarian inflammation terminated by resolution, *active depletion* had been resorted to. From ten to twelve ounces of blood should be taken from the arm, and, if necessary, this might be repeated, particularly at a menstrual period, if there be signs of the menstrual molimen without the usual critical discharge. To prevent the further necessity of venesection, I give doses of two or three grains of calomel, with or without a quarter of a grain of opium, every second or third hour.

LOCAL BLOODLETTING.—Instead of eight or ten leeches to the seat of the disorder, it will be necessary to apply from fifteen to twenty, the bleeding from the leech-bites being well promoted by a warm, thin linseed-meal poultice. One or more of such applications may be required, but it must not be supposed that by these means one can always check inflammation, for in one of Montault's cases, a spontaneous opening took place through the skin, notwithstanding two hundred leeches had been applied over the tumour at different times. The utility of combined bleeding and calomel is shown by Loënhardt in the following case:—

CASE 76.—Mme. S., aged forty, of middling stature, delicate figure, and florid complexion, the mother of several children—the youngest of which is eight years old—having hitherto enjoyed good health, was attacked, March 12th, 1829, with abdominal pains in consequence, as she supposed, of catching cold when the catamenial period was just over. These pains increased considerably, and compelled her to keep in bed. She complained of a continued throbbing in the right ovarian region, and a distressing desire to pass water, accompanied by scalding: the urine was red and clear. On closer examination the abdomen appeared nowhere enlarged or tender except in the above-mentioned spot, which was swollen, and pressure there considerably increased the pain. The vagina was hot, but not painful, neither was the rectum,

but upon examination with the finger through this passage, the ovary of the right side of the uterus was found swollen and painful. The patient was feverish and thirsty, with flushed cheeks, suffused eyes, a white dry tongue, pain in the head, pulse quick, but neither full nor hard. She was put on a strict antiphlogistic treatment, and recovered in the course of eight days. On the 17th April of the following year, an alarm of fire in the night was the cause of her catching another severe cold. She passed a sleepless night, had frequent rigors, with pain in the abdomen, and suppression of the catamenia took place. The next morning she complained of dull pain on the right side of the abdomen, in the same spot as formerly, much increased on pressure, but it appeared to be deeper seated this time, and the abdomen was not so swollen. She experienced a constant forcing to evacuate the bowels without effect, but she had no difficulty in passing water. The vagina felt hot and dry. Introduction of the finger into the rectum produced pain. The ovary was evidently in a state of inflammation, but this time it was more swollen and more painful. The constitutional symptoms were more marked, the skin was hot and dry, she had much thirst, the head was confused, the pulse 126, not particularly hard, the urine sparing and red. She was bled to ten ounces; twelve leeches were applied to the abdomen, which was afterwards fomented with a narcotic application, and a grain of calomel was administered every two hours. 19th.—Her general condition was improved, but the pain in the abdomen remained unabated, and there was more impulse to strain, by which only a small quantity of mucus passed. The bowels had not been moved, although she had taken ten grains of calomel, and enemata had been instantly returned without effect; twenty more leeches were applied to the painful spot, and besides the calomel powders, she took an oleaginous emulsion. 20th.—The bowels acted twice during the night, and the irritable state of the rectum somewhat diminished, but the abdominal pain was not much abated; the pulse continued quick, although neither full nor hard, the heat of the surface was moderate, urine red and thick; ten more leeches were applied. She was directed to apply a drachm of mercurial ointment every two hours, and to take

a warm bath. 23rd.—After a restless night the local and general symptoms became aggravated; twelve ounces of blood were taken, in spite of debility, and on tying up the arm she fainted. In order to modify the action of the bowels, which had been much increased by the calomel, a little extract of opium was added to an emulsion, and the mercurial frictions stopped. This last bleeding produced a complete change, for the next morning the pain had nearly ceased, and the action of the mercury showed itself upon the gums and salivary glands, but her recovery was somewhat retarded from the nurse having, contrary to orders, used the mercurial friction the night after its interdiction.

MERCURIAL INUNCTIONS.

I have advocated their use in sub-acute ovaritis, and they will be found equally useful in the treatment of acute ovaritis, if the quantity employed be increased in proportion to the intensity of the complaint. Plastering half an ounce of mercurial ointment on the abdomen of a patient suffering from idiopathic or puerperal ovaritis, reminds one of Dr. Meigs' expression relative to the employment of calomel in the same disease: "You are going to put two or ten grains of calomel on the mucous membrane of the stomach to cure sixteen feet square of red-hot serous tissue, which is like a prairie on fire." If any utility is to be derived from mercurial inunctions, they must be made according to the plan of M. Serres d'Uzes, who covered the whole anterior surface of the abdomen with a coat of strong mercurial ointment two lines thick; and without taking this off, a similar application was renewed every two hours, so as to consume two pounds of mercurial ointment in forty-eight hours. M. Serres has found this plan successful in many forms of abdominal inflammation, but thinks it useless to continue it, if, after two days, no benefit has been derived: according to his statement salivation does not follow this practice. Lisfranc lauds this mode of treatment in acute inflammation of the joints. He has found it successful in metro-peritonitis, even when the malady was epidemic, and he cites the name of an obstetric practitioner of repute in Paris, who also found it useful in that disease. Salivation by this means need not,

therefore, be much dreaded; in fact, it will increase the chances of marked improvement, and chlorate of potash will keep stomatitis in check.

PURGATIVES AND INJECTIONS.

These are less serviceable than in the treatment of the milder form of ovaritis, their remedial tendencies being counteracted by the pain they mechanically determine, and by the necessity of disturbing the patient. That the bowels should be relieved every second or third day is all that is requisite during the acute period of the complaint. Considering that cubeba and copaiba have often suddenly cured, at the same time, blennorrhagia and orchitis, it would be worth while trying the same remedies in blennorrhagic ovaritis, for, at least, no harm could be done.

SPONTANEOUS OPENING OF THE ABSCESS.

I have stated that the resolution of ovarian abscesses is of rare occurrence, and I have pointed out the roads by which the pus escapes, showing, at the same time, that the least dangerous mode of elimination of the pus is through the vagina. From the observation of this fact, to an attempt to imitate the process by which Nature has often brought about a cure, there was but one step. Practitioners of former times were obliged to found their diagnosis of pelvic tumours on rational symptoms only, not being possessed of our improved modes of exploring the deep-seated abdominal viscera; they therefore preferred to let these tumours take their own course, and open spontaneously, which sometimes occurred with impunity, even after a prolonged retention of pus. Thus, Lassus relates the case of a woman, who, for several years, had a hard, voluminous tumour in the abdomen. The abdominal pains became excessive, and the patient's death was supposed to be imminent, when she suddenly voided a great quantity of pus through the vagina. The pain vanished, the abdomen returned to its natural size, and the patient was soon restored to health.

Even now practitioners urge that it is well to delay opening ovarian abscesses as long as possible, because the pus is so well limited, that it may remain for years without finding its way into

other organs, because one should never despair of Nature's power of absorption; evident collections of pus having been repeatedly known to vanish completely as caustic penetrated deeper and deeper, and because these abscesses will not be dictated to, insomuch as they will sometimes perversely burst of their own accord after having been opened in the most judiciously chosen spot. On the other side, it is well observed, that if left to itself, the collection of pus continually predisposes the patient to peritonitis, by extension of the inflammation, as well as by the continued presence of a large quantity of pus in the pelvis; in which case there is a greater chance of its perforating the peritoneum, and causing a fatal termination. Even when the perforation takes place through the skin or the mucous membrane, it will seldom do so until too much mischief has occurred by extensive inflammation in the adjoining organs and cellular tissue, for the constitution to be benefited by the result; while at the same time hectic fever, and subsequently protracted suppuration and permanent fistula, reduce the patient to a state of marasmus. It often happens, when the skin is opened, that the spontaneous bursting of the abscess is not effected in the most favourable situation for voiding the pus, and thus a vitiated fluid is allowed to remain in the *cul-de-sac*, causing inflammation of the surface of the cyst, and its subsequent perforation so as to find a freer vent for its secretions. Should the abscess communicate with the bladder or the intestines, the contents of these viscera may penetrate into the ovarian abscess, causing death.

If, instead of leaving the opening of pelvic tumours to Nature, the surgeon, so soon as fluctuation becomes manifest, opens them with all due precaution at the place where they point, and whence, in general, the pus can easily flow, the patient is immediately relieved from the pain arising from the inflammatory distension of the cavity, and from many other dangers already enumerated. Loss of strength being thus prevented, the patient has a better chance of recovery; for it stands to reason that the small incision thus made has a greater tendency to heal, than the rugged lips of a spontaneous and ulcerated opening. Chronic inflammation of the neck of the womb, of the vagina, the rectum, and the bladder, the

results of the continual passage of pus on the mucous membranes of these parts, are also generally avoided by this artificial opening; no doubt from the tumour collapsing, its sides speedily adhere, and thus heal without fistula. By opening these tumours in that portion of their extent accessible to the surgeon, there is also the advantage of being able to inject liquids into their cavity, in case it be necessary to remove foetid secretions.

Bossu and Martin de Bordeaux have successfully opened circumscribed abscesses of the peritoneum so soon as fluctuation became evident, and Baudelocque looks upon the question as decided in favour of artificial opening of the tumour. Dr. Grisolle, in his paper on abscesses of the iliac fossa—abscesses much resembling the tumours now under consideration, also decides in favour of an artificial opening. Velpeau, Mme. Boivin, and others, are of the same opinion, and Recamier for many years successfully adopted this plan of treating ovarian and iliac abscesses. In the majority of cases where it is not had recourse to, sudden death is caused by their opening into the peritoneum, or the drain made on the system by interminable fistula produces an equally fatal, though perhaps a less speedy result. While following the Paris hospital practice, I have often observed those patients from whom the pus had been voided by the vagina or the rectum leave the hospital uncured, after remaining five, six, or seven months there; and a year or two afterwards we have not unfrequently met these same individuals, still suffering from discharges caused by the protracted suppuration of the broad ligaments. In illustration of the fatal consequences resulting from a procrastination of opening the tumour, I narrate the following case:—

CASE 77.—A woman, aged twenty-four, had been suffering for a few months from an affection of the abdomen, supposed by her medical attendant to be cancerous. She consulted M. Guillot, who, in an examination by the vagina, recognised a tumour protruding into that passage, in which he thought he detected fluctuation. So great, however, was the pressure of the tumour on the vagina, that but one finger could be made use of for the exploration, and this could not be introduced higher than the os uteri, and a silver sound could scarcely be

passed between the mucous linings of the vagina. M. Guillot proposed the vaginal opening of the tumour, but the other medical attendant considered it cancerous, and looked upon the obscure fluctuation as that often presented by encephaloid growths. The vaginal puncture was therefore omitted; the tumour increased in size, and in a few days made its appearance outside the vulva. Fluctuation became evident, and the tumour was opened, and gave vent to a great quantity of pus. No intense inflammation ensued; the patient nevertheless died, weakened by the protracted and abundant suppuration of the tumour. In this instance the operation was performed when the local complaint had already undermined the health of the patient; but no doubt, if an experimental puncture had been made as soon as the tumour became prominent in the vagina, the diagnosis would have been more correct, and the patient's life saved. In the case of a young woman for whom Velpeau was consulted, fluctuation was perceptible in a pelvic tumour; he proposed its vaginal opening, to which the patient would not consent. An aperture, therefore, took place in the iliac region, permanent suppuration was established, and the patient died of marasmus.

When once it is decided that an opening is necessary, the question naturally arises—where should it be made? The most important point is to study the means which Nature seems disposed to adopt, so as to choose the spot where fluctuation is most evident, and where there is the least chance of wounding the peritoneum, arterial vessels, or any important organ. The opening should also be made, as much as possible, with the view of affording every facility for the escape of the pus. The trocar or the knife may be employed.

PUNCTURE OF ABSCESS.

When the abscess is small, and affords the reasonable prospect that it may be cured by being once emptied, it is better to do so with a long curved trocar. It is evident that one evacuation of pus is sometimes sufficient, for it has occurred to me once, and to Aran four times, to make a second opening with a trocar without finding pus, and the patients recovered. These second punctures of pelvic ab-

scesses do not seem fortunate. Dr. West, whose skill is well known, withdrew ten ounces of pus from an abscess situated in the vesico-vaginal cul de sac; the tumour having reappeared, he perforated the bladder in attempting to puncture the abscess.

If the opening be made with a trocar, it is well to try to maintain the canula in the womb, for should it be removed before the obliteration of the cavity, it would be difficult to replace it; and in trying to reintroduce it into the cyst, it has sometimes penetrated the peritoneum, as in a fatal case which happened at the Hôpital Cochin. This difficulty of keeping open the communication with the interior of the abscess, makes its incision preferable when the abscess is large, and so constituted as to render it subsequently useful to make injections. Sadler having to treat an abscess of the right ovary about the size of the fist, and finding that it had no tendency to open either by the vagina or rectum, pressed it down with the left hand, and with the right punctured it by means of a curved trocar. Several ounces of pus were voided, and matter continued to flow till the fifth day after the operation, when the wound healed. Abundant diuresis removed a concomitant ascitic effusion.

VAGINAL INCISION OF OVARIAN ABSCESES.

As the vaginal opening of the abscess is the most desirable, I will first treat of this mode of operating, and will preface my observations by stating, that this way of treating pelvic abscesses was known to Paulus Ægineta, and was adopted by Callisen—*Systema Chirurgiæ Hodiernæ*, t. ii. Towards the end of the last century it was performed by Macarn, and since then by Pelletan, Dupuytren, Alphonse Leroy, Neumann, Lever, Merriman, Roux, Velpeau, Dubois, Nonat, Robert, and Monod, but most frequently by Recamier. The arguments I have brought forward in its favour, the successful instances I have adduced, and the example of so many eminent practitioners, will no doubt recommend this operation to the profession, and diminish, if not preclude, the possibility of the patient being left to the uncertainties and dangers of a spontaneous opening of the tumour.

In the first place, to avoid dangerous accidents, it is necessary, before operating, to bear fully in mind the relations of the vagina, the rectum, the bladder, the mode of their connexion, and the disposition of the peritoneum in the pelvis. It is well known that the peritoneum covers a quarter, or sometimes even a third, of the posterior portion of the vagina, being deflected into what is called the recto-vaginal space. This disposition of the serous membrane would often seem to forbid the opening of the vagina by an incision, or, indeed, by any other means ; but when a tumour exists in the cellular tissue of the pelvis, it pushes up this covering. In fact, this occurs every day when the bladder is distended. The bladder then rises above the symphysis pubis, lifting up the peritoneum, which it drags with it ; and thus allows of the possibility of the high operation for the stone, or of puncture above the pubis. As a similar displacement of the peritoneum occurs whenever a tumour is situated behind the vagina, it is possible to perform an operation on all the posterior portion of this canal without penetrating into the peritoneal cavity. The instances are very rare, where we are not sure of the position of the peritoneum with regard to the tumour ; for whenever this latter is very prominent, so as to seem to be one with the vagina, it may fairly be inferred that it is sub-peritoneal ; or if it be intra-peritoneal, that adhesions exist between it and the serous lining of the recto-vaginal space. Assurance is made doubly sure, if, on percussing the tumour through the vagina, no sensation similar to that of *ballottement* is perceived ; and if, on varying the posture of the patient, the relative positions of the vagina and the tumour remain the same. Before performing the operation, it is advisable to ascertain the exact position of the uterine arteries, for Dr. Bourdon has sometimes, in cases of pelvic tumour, felt the pulsation of one of several arteries in the neck of the uterus ; and Huguier affirms that towards the union of the upper third with the remainder of its length, it is constantly encircled by an artery as big as a crow-quill.

To perform the operation, Recamier employed an instrument somewhat similar to a pharyngotomus, for it consists in a convex bistoury, the point and edge of which may be covered by a silver blade of the same shape, but larger. This

silver shield slides on the back of the bistoury, and terminates at the handle, in a prolongation, by means of which the point and edge of the bistoury may be unmasked to any extent the operator may desire. The patient should be placed on her back, with the thighs separated and flexed, while an assistant presses the abdomen with his hands from above downwards. Recamier used to introduce the index of the left hand into the vagina, and having determined upon the point for operating, he then slid the instrument upon the finger, which had not been withdrawn from the vagina. During this time the blade of the bistoury was protected by the silver sheath, but when he had penetrated to the proper depth, he unsheathed it, and plunged the extremity into the tumour, until he felt something give way, and saw the liquid to which the incision had given vent. This wound, in the shape of a button-hole, was made vertically, to avoid wounding the uterine arteries. The instrument was then again sheathed, and withdrawn with the same precaution, the finger giving all necessary information concerning the extent of the incision, and the thickness and resistance of the parietes of the tumour. If the incision were not found sufficiently extensive, then a probe-pointed bistoury was conducted into the vagina, with its flat side laid on the anterior aspect of the finger, when the incision was extended.

Recamier's instrument is far from being indispensable; for an ordinary straight bistoury, conducted with due care, and of which a part is carefully protected, may be used. It is of importance not to plunge the bistoury too deeply into the tumour, for fear of transfixing it, and wounding some adjacent organ. When the incision has been made through the posterior portion of the vagina, it is prudent to introduce the finger into the rectum, so as to ascertain before prolonging it, how far distant the inferior angle of the wound is from the intestine. When the tumour is found to be distended with a thick viscous matter, having no disposition to leave the cavity, it is not well to inject a sufficient quantity of tepid water into the cyst, to soften and eject its contents. In all instances the pressure on the abdomen is to be carefully continued by graduated compresses, applied to the scrobiculus cordis under the tight body-bandage, by which

means the abdominal viscera are forced down. The following case will illustrate the practice :

CASE 78.—A woman, aged thirty-one, entered the Hôtel Dieu, January 22nd, 1840. Her general health was good, and menstruation regular; but a year and a half previously she miscarried, but soon recovered. Three weeks after her entrance, menstruation appeared, having been delayed eight days beyond the usual time, and being accompanied by violent pains on the left side of the abdomen. The menstrual discharge was excessive, and lasted longer than usual. Feb. 19th, the patient was feverish, and perceived a swelling on the left side of the hypogastrium, attended with lancinating pain. This tumour was hard, moveable, and seemed to be so divided as to present two portions, the one, inferior, deep-seated, and situated near the mesial plane; the other, superior, more superficial, and lateral. Vaginal and rectal examination confirmed these peculiarities, and permitted the detection of fluctuation in the inferior portion of the tumour. There was nothing abnormal in the neck of the uterus, but on each side of it was felt the pulsation of a large uterine artery. There was difficulty in passing urine, constipation, pains in the loins, weight in the fundament, pains in the left thigh and groin, fever, and prostration of strength. Baths, poultices, and purgative enemata were ordered. 28th.—Irregular shiverings occurred, and on a vaginal examination Recamier found fluctuation behind the neck of the uterus. He made a vertical incision through the posterior wall of the vagina, but only blood came away; on the following days, however, sanguineous pus was discharged, and the patient felt relief. March 6th, the fever returned, but without the shiverings; on the 10th, the patient vomited several times. She still complained of pain in the abdomen, though the wound was closed, and no matter could exude. 11th.—By a vaginal exploration, while an assistant pressed down the abdomen, Recamier felt a fluctuating tumour to the left of that previously opened. He made a second incision, when a great quantity of fœtid pus, mixed with blood, gushed forth. Baths, injections, poultices were continued. In the following days the quantity of pus voided by the wound, the fœtid smell, and the size of the tumour diminished. The

patient's strength began to return, and she could take food ; the injections were still continued. 24th.—The opening was completely healed, no traces of the tumour remained. The next day the patient left the hospital perfectly cured. This case is interesting for the following reasons :—The miscarriage had occurred a year and a half previously ; and was the predisposing cause of the subsequent ovarian inflammation. The case exhibits a great precision of diagnosis, since, by means of different examinations, two tumours were discovered connected together—the one, inferior, deep-seated, and approaching the mesial plane, being situated behind the uterus ; while the other, or superior, was superficial and lateral, and had its seat in the broad ligament in the neighbourhood of the ovary. Incisions were made into two distinct tumours. The first puncture was made in the central tumour, and did not extend sufficiently deep to reach the collection of matter ; nevertheless, the pus soon made its way out at the spot where the road had partly been prepared for it. The urine was then passed freely, though constipation continued ; this symptom being accounted for by the existence of the lateral tumour, which, descending behind the vagina, pressed on the rectum ; for constipation ceased when the second incision was made, and a large quantity of pus was passed. The patient was cured in a month and three days. If these tumours had been left to open spontaneously, how long would the disease have lasted, or would it have been cured at all ?

When artificially opened, the walls of a tumour have a great tendency to collapse, and the tumour itself to retract, and there is less liability to the introduction of air into its cavity, which is generally followed by the decomposition and fœtidity of the pus. Besides the methodical compression, Recamier attached great and perhaps undue importance to keeping the cyst full of water, and therefore recommends its injection two or three times a day. When performing this operation, it is necessary to take care to conduct the injection with very little force, so as not to bring into play the elasticity of the parietes of the cyst. Pillows should also be placed under the nates of the patient, with the intention of keeping, if possible, the opening of the cyst above the level of its fundus.

This position, and the compression, should be continued so long as the walls of the tumour are too thick or too dense to collapse. When they have acquired sufficient elasticity to follow the water on its retiring from them, the patient may resume her accustomed position in bed, but the injections should be continued so long as there remains a cavity. Besides other advantages, the repeated introduction of the canula of the syringe prevents the wound from closing before the cavity of the cyst is obliterated, and answers the purpose much better than the catheters placed in the wound with that intention, particularly when the great difficulty of keeping these instruments in their place is remembered. It is indispensable to push the water to the extremity of the syringe before beginning the injection, and to let it glide along the pulp of the finger previously introduced into the vagina, so as to secure its immediate entrance into the wound without injuring the patient. It is also of extreme importance to propel the piston of the syringe with great gentleness; for in some of Recamier's cases the injection of water into the cyst caused speedy and fatal peritonitis. It is well to use only tepid water, but at a later stage of the case, adhesion may be promoted by the injection of a very weak dilution of tincture of iodine.

Chomel mentions, in his lectures, that two of his patients experienced every two or three months a swelling in the iliac region, and then passed a considerable quantity of pus by the vagina. One had been in this state for two years, the other for eight. In such cases it would be well to imitate Dr. Oldham, who, in two instances, radically cured the patient by cutting out a portion of the vagina so as to drain the ovarian abscess. But this should not be attempted until the abscess is well distended. It is considered necessary by some to paint the edge of the wound with nitrate of silver to prevent its healing too speedily.

RECTAL INCISION OF OVARIAN ABSCESES.

I have already explained my reasons for disapproving of this plan of treatment, which I only employ when the abscess is on the point of bursting into that canal; when it is better to open it at once, instead of allowing any further disorganization of the tissues of the rectum.

OPENING OF OVARIAN ABSCESSSES THROUGH THE ABDOMINAL
PARIETES.

If fluctuation be not perceived in the vagina or the rectum, but be found in the hypogastric region, then the aperture must be made in that part of the abdomen towards which the tumour points. It would, however, be highly imprudent to open the abscess without having effected an adhesion between the cyst and the abdominal walls, as one can never be sure that such has already taken place. Several plans may be adopted for this purpose, all borrowed from the treatment successfully employed in the cure of abscess of the liver. Dr. Graves makes an incision of a portion only of the thickness of the abdominal parietes, and then applies linseed-meal poultices over the incision; and the pus almost always finds an exit where the walls of the tumours have been thus weakened. When an opening is once formed, it is important that the free issue of the matter be maintained. As this treatment has been very successful in abscesses of the liver, it might be equally so in those pelvic abscesses which point towards the surface. Dr. Begin's mode of treating abscesses of the liver is similar to the preceding, inasmuch as he cuts down on the tumour until he reaches the peritoneum, but does not divide it. He then dresses the wound; and a few days after, when, as the result of inflammation, the parietal peritoneum becomes adherent to that portion of the membrane which covers the abscess, he punctures it, and thus gives issue to the pus. This plan of treatment might also be advantageously employed; but I have adopted that proposed by Recamier, and which is likewise adopted by M. Martin, of Montpellier. Having decided in what part of the abdomen it is most desirable to effect an opening, and ascertained, by the uterine sound, that the hypertrophied womb does not constitute the most prominent part of the swelling, a certain quantity of potassa fusa cum calce, made into a paste with alcohol, is applied to the skin; and when the thickness of the parietes requires more than one application of the caustic, it is better to remove only the central portion of the eschar, leaving the circumferential portion to protect the cuticle from its action. When the seat of fluctuation is nearly reached by

the caustic, and adhesions have evidently taken place, as shown by the impossibility of the abdominal parietes sliding over the tumour, an incision is then practised in the centre of the eschar. Injection of tepid water may be made into the abscess, to remove fœtid secretions.

The following case, wherein Recamier employed potassa fusa instead of Vienna paste, will give a fair idea of the treatment:—

CASE 79.—A woman, aged twenty, entered the Hôtel Dieu, February 1st, 1840. Five weeks before, she had been confined of her first child, and had ever since suffered from pain in the abdomen. She soon perceived that a tumour had formed in the right hypogastric region. The patient had shivering fits, fever, and vomiting, she was pale, with eyes deeply sunken, and suffered from irregular shiverings during the day, and perspirations at night; the pulse was small and frequent, and there was pain on passing the fæces and urine. It was easy to feel through the abdominal walls a hard tumour, about the size of a large apple, in the right iliac region; and on a vaginal exploration, fluctuation was discovered behind the neck, and to the right of the body of the uterus. Recamier, not finding any arterial pulsation, made an incision, and a large quantity of pus was evacuated. Injections, baths, and poultices were ordered. During the following days considerable improvement took place; still the pulse remained frequent, and there was pain on passing urine, and on the right side of the hypogastric region. The tumour, which had been opened by the vagina, was much reduced both as to size and the amount of its secretion, but there was considerable tension in the right iliac fossa. Feb. 26th.—A pulsating tumour, causing much pain, was felt in the groin. The pain was much augmented by the slightest movement of the right leg, and particularly by its extension. 27th.—Fluctuation became evident, and the vaginal opening of the tumour was closed. There was high fever, with abundant nightly perspirations. 29th.—Two fragments of caustic potash were applied on the prominent point of the tumour; on the following day the eschar was divided, and two other fragments of caustic potash were placed in the wound. March 2nd.—Recamier made an incision in the eschar, and

gave issue to a large quantity of foetid serous pus. This operation greatly relieved the patient, and caused the movements of the lower limbs to be no longer painful. In spite of diarrhœa, her health improved; sleep, appetite, and strength returned, the volume of the tumour decreased, and injections diminished the foetidity of the pus. 25th.—The fistulous opening of the tumour was closed, the patient gained flesh, and on the 29th she left the hospital perfectly well. Since then her health has been uninterruptedly good. It was reasonable to think that a vaginal incision in the lowest part of the tumour would suffice, but fluctuation appearing in another part of the body, another opening became necessary. This case, however, certainly tells in favour of the treatment, for, notwithstanding the weakness of the patient and the severity of the complaint, she was completely cured in two months.

Should the abscess burst in the peritoneum, the consequences must be combated by large doses of opium, as Stokes and Chomel have recommended in intestinal perforations—a plan of treatment which Graves found successful in a case of abscess of the liver which burst into the peritoneum.

CHAPTER XXXV.

HÆMATOCELE.

SYN.—Sanguineous pelvic tumour.—Ovarian apoplexy.—Ovarian disrapture.—Hæmatocèle peri-uterine.—Clot in pelvis.

DEF.—*Cystic tumours formed by the effusion of blood in or outside of the peritoneum which lines the pelvis.*

The effusion into the peritoneum of a large quantity of blood, which had come from the Fallopian tubes, had been noticed by Ruysh. It appears that a similar case will be found in a Leipsic scientific publication for 1693, and another in *Hufeland's Journal* for 1818. Although these tumours are almost unnoticed in classic works, they are not very uncommon, for since attention was drawn to them by Recamier, under the name of "Tumeurs sanguines," Velpeau has related similar cases—*Mémoire sur les Cavités Closes*—and within the last two years Andral, Huguier, Latis, Dufraignes, Piogey, Monod, Robert, Viguès, Denonvilliers, and Nélaton have published others. Of English writers, I was the first to investigate the subject in the second edition of this work, adducing cases of Dr. Bennet's and my own. Subsequently, Dr. West published others. A valuable contribution on this subject by Prof. Braun will be found in the *Wiener Med. Wochenschr.*, 1861, and this matter has been exhausted in the first volume of Drs. Bernutz' and Goupil's clinical work. A careful analysis of all well-authenticated cases enables me to class them in the following groups according to their pathological conditions:—

1st. The blood may come from a rent in the tissues of the ovaries, as first established by the author in 1853, and subsequently in 1855 by Laugier—*Comptes rendus de l'Académie des Sciences*.

2nd. The blood may come from a rent in the oviducts, the result of retention of menstruation.

3rd. The blood may come from the open mouths of the Fallopian tubes, being the result of a perverted menstrual impulse.

4th. The blood may be the result of an inordinate flow to the reproductive organs, which causes menorrhagia as well as hæmatocele. This is dependent on its cachectic state, produced by malignant eruptive fevers, jaundice, purpura, and, still more frequently, by chlorosis.

5th. The blood may come from the ruptured varicose veins of the pampiniform plexus of the ovary, which forms a kind of erectile apparatus, as stated by Bichât in his work of surgical anatomy, and by Dr. Devalz in his thesis on utero-ovarian varicocele. This condition coincides with a varicose state of one or of both of the labia, and was caused by too frequent pregnancy, long-continued standing, and jolting in bad conveyances on rough roads.

6th. The blood may come from the peritoneal membrane, hemorrhagic peritonitis being analogous to hemorrhagic pleurisy, and inordinate coition being the determining cause.

I shall say no more of the three last origins of the hæmatocele, but a work on ovarian pathology would be incomplete if it did not illustrate the sources of hæmatocele, relating to the ovaries and their oviducts, for it has been shown by Voisin that whenever a post-mortem examination has permitted the hemorrhage to be traced to its origin, this has generally been a rent in the ovary, its blood-vessels, or the oviducts. Here is a well-marked case of ovarian hemorrhage:

CASE 80.—A woman, aged twenty-nine, in whom the courses were regular, menstruated in February, 1851, but the flow only lasted two days, and was followed by continued hypogastric pains. Five weeks after, the flow again appeared, but very scantily, and only lasted two days. The hypogastric pains became worse, and were accompanied by constipation, and a difficulty of passing water. The next month the menstrual flow returned, but merely as a show, in the midst of symptoms of acute peritonitis, and the patient entered the wards of Dr. Marotte, at the Hospital of Ste. Marguerite, in Paris. This gentleman detected a swelling, which seemed to consist of the womb enlarged to the size of

the fist, and intimately connected with a larger tumour, about as big as an infant's head. Soon after the patient's admission to the hospital she passed in the stool about a pound of coagulated blood, and considerably more in the course of the following days. At the end of the month blood and pus came away by the vagina. Symptoms of purulent resorption appearing, Denonvilliers was consulted. On introducing his finger into the vagina, he found a cavity behind the neck of the womb. This small cavity communicated with a larger, behind the womb itself. An incision was made, so as to establish a free communication between both cavities, and to permit the injection of tepid water; the patient got worse, and died in four days. The hypogastric region presented evident proofs of peritonitis, and, on carefully removing the intestines, a recto-uterine cyst was discovered filling the pelvic cavity. With regard to the topography of the tumour—1. The lower wall was formed by the recto-vaginal pouch, and perforated, so that the cyst communicated with the vagina. 2. The upper wall, by the layer of false membranes which united the superposed intestines. 3. The cyst rested on the rectum, perforated during the patient's lifetime. 4. The womb and the ovaries were in front of the cyst. The womb was perfectly healthy; one of the Fallopian tubes was impermeable. The ovaries were swollen, and they contained several *small cysts opening into the sanguineous tumour*. "*One of the little cysts,*" says M. Nélaton, "*still contained blood-clots.*"

The morbid specimen was exhibited to the *Soc. de Chir.* of Paris, and Denonvilliers, Lenoir, and Nélaton considered this case to be one of ovarian hemorrhage. They admitted that the elimination of blood from the ovarian stroma having gone beyond its normal bounds, the blood had flowed into the recto-vaginal pouch, had become circumscribed by local peritonitis; and here I may observe, that in my first edition I stated "that the effusion of blood from the ovarian tissue at the menstrual epochs, is much more frequently followed by local peritonitis than is generally supposed."

The following case was related to the *Société Médicale des Hôpitaux* in 1856, by M. Guérard:—

CASE 81.—"A young woman, aged eighteen, put her hands

into cold water during the progress of the menstrual flow, which was suddenly suppressed in the midst of severe abdominal pain. The abdomen swelled and fever came on. On examination, the body of the womb was found forcibly pushed backwards, while its neck was found under the pubes. There was a tumour, painful on pressure, which filled the pelvis, and surrounded the womb on all sides. A few days after there was diarrhœa, accompanied by blood; the tumour became softened and disappeared by degrees, the womb assumed its proper position, and in a month the patient seemed cured, and the menses returned as usual; but were again suddenly suppressed under the influence of a severe moral shock, which produced also a violent fit of shivering, a quick and steady pulse, vomiting, intense pains in the belly, which swelled, and the patient was carried off in forty-eight hours. On examination, blood and false membrane were found in the peritoneal cavity; in the pelvis there was a collection of blood, distinctly marked by false membranes, some of which had given way. About ten inches from the anus there was a ruptured ulceration, through which the blood had passed in the stools. The right ovary contained three sanguineous cysts, two of recent formation, the third of previous growth, containing a small yellow clot, and communicating with the peritoneal cavity by a fistulous passage opening behind the ovary. One of the recently formed sanguineous cysts contained a black clot, and opened likewise into the peritoneum. The other recently-formed focus of blood was full, but did not open into the peritoneum." These sanguineous collections were the result of ovarian apoplexy, and were exactly similar to those found in the brain after the sudden rupture of its blood-vessels.

In a case published by M. Luton, *Union Médicale*, 1855, p. 565, the left ovary was swollen, softened, and easily broke down; there was a rent in the right ovary, and a large clot of blood protruded from its lips; it was so capped by the fimbriated extremity of the Fallopian tube, that the hemorrhage might have been supposed to have arisen from the tube, but on careful dissection, a collection of blood was found in the substance of the ovary.

Scanzoni has described as ovarian apoplexy—*Diseases of*

Women, 344—a case similar to Laugier's. A girl of eighteen died suddenly during menstruation, and on opening the body a cavity about the size of a hen's egg, full of coagulated blood, was found in the right ovary. On one side of it there was a rent more than an inch in length, through which six pounds of blood had passed into the peritoneum.

A similar case is related by Dr. Brown—*Edinburgh Medical Journal*, 1855, p. 852.—An unmarried woman, aged twenty-six, who had long complained of uneasy sensations in the lower part of the abdomen, and frequently vomited, walked a mile on the eve of her intended wedding-day; she suddenly felt great abdominal pain, turned pale, and speedily sank. In the midst of about four pints of blood a large clot was found in the peritoneum. There was little amiss except the left ovary, which was as large as a turkey's egg, and had a rent an inch and a half long. The increased size of the ovary was in part due to extravasated blood. In a discussion on this case, in the Medico-Chirurgical Society of Edinburgh, it was stated that Dr. Malcolm of Perth lost a patient from hemorrhage into the peritoneum, and that the blood came from a ruptured ovarian artery. In the same periodical, there is a case of a woman who recovered from abortion to die suddenly a few days afterwards from peritonitic symptoms. On opening the body, no intestinal rupture was found, no evidences of general or of local peritonitis, nothing but an extensive rupture of an ovary, which was divided in its whole length, and between the lips of the rent was a small clot. The observer being called away suddenly, noted nothing more.

Dr. Madge lately communicated a very interesting case of hæmatocele from a ruptured ovary to the Obstetrical Society of London, which will be found in the third volume of the *Transactions*.

A reviewer of my last edition—*Glasgow Medical Review*—mentions that we “have seen several, just in their initiative, consisting of folds of broad ligament gathered round the ovary and agglutinated together by lymph. They were usually sprinkled over with vesicles of various sizes, and contained small cysts of fluid blood, and the ovary was in a state of softening, and incipient absorption. And we have

seen one case of long standing and great advancement, which was fatal from the rupture of one of its cysts, and the discharge of its contents in the cavity of the pelvis. Both Fallopian tubes were occluded, and distended into membranous bags, which were filled with a bloody fluid, which did not coagulate. One of these cysts had contracted an adhesion to the bladder, which it habitually compressed and prevented from expanding sufficiently to contain more than a couple of ounces of urine. The other had slid down into the recto-vaginal sac and lower pelvis, and, there is reason to fear, was broken during an examination by the rectum."

The small cartilaginous-looking cysts which are sometimes found attached either to one of the ovaries or to the Fallopian tubes, are probably due to the blood they had let loose; and the hard round bodies which sometimes float freely in the peritoneum may have the same origin.

Retention of menstruation has been discussed as a cause of internal metritis, and hæmatocele is evidently thus produced. When the menstrual blood is retained, from whatever cause, the pressure becoming too great on the walls of the oviducts, they burst, as in a case related by Dr. Monck—*London Med. Gaz.*, Vol. XXVII.—of a girl of eighteen, who, from adhesion of the walls of the vagina, had never menstruated, and who suffered from the usual forms of menstruation every month; in the course of time these pains became continuous, with monthly exacerbations, and after suffering in this way for eighteen months, she died of peritonitis. The oviducts were sufficiently distended to admit the little finger, and near the fimbriated extremity of the left oviduct, there was a rent two lines in length, through which large quantities of blood had passed into the peritoneum. In the *American Journal of Medical Sciences*, No. XXIV., there is given the case of a woman, who, after parturition, had an attack of metritis ending in the adhesion of the uterine walls. Behind this obstruction the menstrual fluid accumulated, distended the Fallopian tubes, ruptured one of them, through which blood escaped into the peritoneum, and caused death.

Retention of menstruation may cause hæmatocele without rupturing the Fallopian tubes, as in a case mentioned by Sir B. Brodie—*London Med. Gaz.*, Vol. XXVII.—in which he

punctured an imperforate hymen, at St. George's Hospital, and soon after the patient died of peritonitis. "The peritoneum contained a large quantity of menstrual blood, without there being any rupture of the womb or oviducts, so that it was impossible to explain the fact without admitting *that the blood had passed from the uterus backwards through the Fallopian tubes.*" Several cases will be found at page 154, in which blood had passed into the peritoneum from the oviducts without their being ruptured. The occlusion of the os uteri by inflammatory adhesion, or by hypertrophy, may likewise cause retention of menstruation and regurgitation of blood into the peritoneum and hæmatocele, as in the following case, which was the starting-point of Dr. Bernutz' researches on the phenomena of menstrual retention.

CASE 82.—A woman, aged forty, menstruated regularly, was pregnant seven times, but twice only carried her child the full period. In her last confinement it was necessary to turn the child. Without any apparent cause, menstrual suppression took place, and the patient suffered much from abdominal pains. The following month there was a recurrence of the pelvic pains, without any discharge. Leeches to the fundament were ordered, with blisters to the ovarian region; and while the patient was in a warm bath she passed a clot of blood, sufficiently well organized to be called by her a piece of skin. This was followed by a slight but continued flow, which afforded considerable relief. Tension and swelling existed in both ovarian regions, and when pressed upon, the pains were compared to those of the last stage of parturition. Micturition was painful, there was constipation, and tenesmus when the bowels acted. These symptoms had been somewhat subdued, when she was suddenly seized with intense pain, first felt in the lower part of the pelvis, but afterwards radiating to the whole of the abdomen, with continued vomiting; the pulse was small, and frequent. Notwithstanding the application of ninety leeches to the abdomen, the patient soon sank; and on a post-mortem examination, traces of chronic peritonitis were found, such as a slate-coloured peritoneum and a melanotic tint of some of the intestines. The abdominal viscera were also in a state of recent agglutination, and when separated, the intervals between them

contained a brownish-red sanious liquid. The walls of the uterus were three times their usual thickness, and its cavity contained about an ounce of blood. *The right ovarian tumour was about the size of a hen's egg, and of a brownish-red colour. When opened, its cavity was found to communicate with that of the uterus by a permeable oviduct, containing a red clot in its uterine extremity, and a mixture of pus and blood in the rest of its dilated extent.* The tumour was formed by the enlargement of the ovarian extremity of the oviduct, the fringed border of which embraced the ovarium, and was so firmly agglutinated to it that the cyst was ruptured on attempting to separate the one from the other. The left tumour was about the size of a turkey's egg, covered with well-organized false membranes of a pale red tint. This tumour was likewise formed by the dilatation of the ovarian extremity of the oviduct, which was also permeable in its whole extent. The fimbriæ of the left oviduct, however, only composed a part of the walls of the cyst, and, uniting with the false membranes, adhered to the ovary, and to part of the broad ligaments, thus forming the cyst. It was not possible to find in its walls an aperture through which the blood could have passed from it into the abdomen. In the pelvic cavity was found the sanious brickdust-coloured fluid previously alluded to, and on removing this, a solid clot was found, three inches in diameter; beneath it was the consolidated fibrine, which, from its colour, texture, and density, was more like cartilage than anything else. Although the whole peritoneal surface was carefully examined, no ruptured blood-vessel was found to account for the presence of the blood. The phenomena of this case may be thus summed up:—Retention of menstruation from uterine inflammation; repletion of the uterine cavity and Fallopian tubes; repeated distension at menstrual periods of the Fallopian calyx, which helped to form the tumour in the ovarian region, and rupture of the tumour. Passage of blood into the peritoneum causing chronic peritonitis, &c. Expulsion of a portion of the retained blood. The swollen and hypertrophied condition of the right ovary showed that, at the menstrual periods, the blood had flowed from it into the cyst and into the peritoneum. The absorption of its central substance will lead to

the comprehension of the following case, which has been published by Dr. Piogey :—

CASE 83.—Eliza F., aged twenty-seven, a delicate woman, first menstruated at eighteen, married, but has been sterile. She entered Necker Hospital on March 25th, 1848. Three months before, the menstrual flow became more abundant and painful, and as it did not return, pregnancy was admitted as the cause of sickness, of abdominal pain and swelling. A globular and voluminous tumour was felt to occupy the left side of the abdomen, from the pubis to the umbilical region. The tumour was hard but fluctuating; the finger, when introduced into the rectum, felt pressed between it and the sacrum. The tumour was opened externally by repeated applications of potassa fusa to the abdominal walls, but the patient died of peritonitis. On opening the body, the tumour was found within the fold of the right broad ligament. This covered a mass of grey semi-organized fibrine, in the centre of which was a chocolate-coloured fluid; and by a microscopical examination, the solid portion of the tumour appeared to consist of fibrine, the liquid being composed of detritus of fibrine and deformed blood corpuscles; the *right ovary* and *Fallopian tube* had disappeared; the left were healthy. In the previous case, the right ovary had broken down in its central portion; and if the patient had lived, the ovarian stroma would most likely have disappeared by degrees, and been totally absorbed, as in Dr. Piogey's patient. One case thus seems to explain the other.

Pauly's work on Diseases of the Uterus contains the following :—

CASE 84.—“Mme. F. T. suffered much at first menstruation. She was married at fifteen, and soon became pregnant. After her confinement menstruation was irregular; she was long subject to a leucorrhœal discharge; menorrhagia also supervened. She sought medical advice, and the neck of the womb was found enlarged to about the size of a pigeon's egg. Removal of the neck of the womb was performed in presence of Lisfranc; plugging was necessary, but there were no serious consequences. The wound healed with great rapidity, and forty days after the operation the patient menstruated, but it was impossible to find the orifice of the uterus.

She however recovered her health, and for two years and a half menstruated regularly, though less abundantly. After that time the quantity of the flow diminished considerably, and the pain increased. In the September of the fourth year after the operation, instead of the catamenia, symptoms of peritonitis set in, with swelling of the right iliac region. These abated under the influence of energetic antiphlogistic treatment, and the patient passed the months of November and December in tolerable health; but instead of the flow appearing every month, the pelvic symptoms became worse. The following January the peritoneal symptoms increased; a swelling was distinctly felt in the right iliac region, which became more painful, and diarrhœa and fever carried her off in the following June.

“The post-mortem examination was made in the presence of Drs. Carron du Villars, Duperlet, and Pauly.

“The vaginal canal ended in a *cul-de-sac*, formed by the solid fibrous cicatrix. The uterine orifice was completely obliterated; the iliac fossa was filled by a tumour, containing in its centre a substance resembling tuberculous matter, which is often observed in a sanguineous tumour of long standing, for no tubercles were found in the lungs or in any other organ. It is to be regretted that no sort of information is given respecting the uterus, the oviducts, or the ovaries. Notwithstanding the obliteration of the mouth of the uterus by the operation, for two years afterwards a menstrual flow, though in a diminished quantity, was regularly secreted. Its diminution was accompanied by dysmenorrhagic pains, and its suppression and effusion in the vicinity of the abdominal opening of the oviduct, by a painful swelling in the iliac region. At every recurrence of the menstrual period, an additional quantity of blood was extravasated, causing the aggravation of the local peritonitis.”

Perhaps the most common cause of hæmatocele is the coincidence of anæmia with so perverse a determination of blood to the reproductive organs, that while it pours from the womb, the blood also passes from the Fallopian tubes into the peritoneum, to become circumscribed by false membranes, so as to constitute hæmatocele. Not having space to treat the subject fully, I refer the reader to the work of Drs. Bernutz

and Goupil ; I shall, however, briefly notice the main points connected with this subject.

Hæmatocele is almost always preceded and accompanied by some kind of menstrual disturbance ; most of the women thus affected have been either subject to dysmenorrhœa, or to the flow being absent, less abundant, or very profuse, or to its dribbling on from one epoch to another. These menstrual irregularities are accompanied by hypogastric pains, often continuing between the menstrual epochs, by constipation, by the difficulty of passing water, or by the frequent desire of doing so. In the meantime the patient becomes deadly pale, as from profuse hæmorrhage. Fever ensues, with symptoms of local peritonitis, and the disease may pass for "inflammation of the bowels, or metritis." But, after a few days, these acute symptoms subside, and when a digital examination is made by the vagina, the finger meets with a swelling in the recto-vaginal pouch. It is difficult to pass the finger up the two superior thirds of this canal, which is more or less forcibly pressed against the pubis, and thus renders micturition difficult. When attained, the neck of the womb is found normal, or its posterior lip may be effaced, and the uterus may be deviated. While the vagina is thus pressed against the pubis, the rectum is pushed against the concavity of the sacrum, which often renders a rectal examination difficult and constipation obstinate. By abdominal pressure, a round tumour, of variable dimensions, is felt in the pelvis or rising from it, and on pressing it, the hand feels fluctuation when the finger of the other hand gives a shock to its vaginal portion. Fluctuation becomes less and less perceptible as the patient improves, for then the tumour diminishes, and its contents become more fibrinous. Fluctuation may be sometimes felt by the double touch. In addition to the symptoms already given, these tumours are fastened down by false membranes, and are not moveable like uterine fibrous tumours. Besides, *these* are of long growth, and peritonitis does not form a prominent part of their history ; however, on account of the manner in which both peri-uterine sanguineous, and uterine fibrous tumours interfere with the rectum and urethra, they have been mistaken one for the other. The absence of expansive move-

ments of the tumour synchronous with the heart's impulse, will show that it is not an aneurism. In iliac abscess, the tumour is smaller, more lateral, fluctuation is more distinct, the corresponding lower limb is painful, œdematous, and the disease does not originate in, or relapses do not occur at, the menstrual epochs. Hæmatocele will be distinguished from ovarian tumours, by the chronic march of the latter, which are not accompanied by the same amount of catamenial disturbance. Should, however, a similarity of local signs render the diagnosis difficult, an exploratory puncture will decide the point, as ovarian cysts very seldom contain the treacle-looking fluid, in which the elements of the blood can be detected by a microscopical examination. In cases of extreme distension of the womb by the menstrual fluid, the finger in the rectum detects the same filling up of the pelvis by a soft substance; but in this case, there is the imperforate hymen, or os uteri, to explain it. Peritonitic symptoms lead to the inference that the effusion of blood is intra-peritoneal, which it most frequently is; but I do not agree with Bernutz, that the term hæmatocele should be reserved for such cases, as some extra-peritoneal instances have been recorded.

TREATMENT.—It is better not to interfere with hæmatocele, for the blood is gradually absorbed by a species of digestion, according to the happy expression of Dupuytren; to have opened them was contrary to all that was known about the treatment of hæmatic tumours, and the dangers of the introduction of air into their cavity. To largely open such tumours, and to tear away the blood-clots, was outrageous practice, for what else but air and decomposed blood could replace the blood-clot? Rare cases will occur in which an opening is justifiable, because the increasing tumour menaces to burst into the peritoneum; but puncture will often suffice, or a small opening should be made with a tenotomy knife, if the fluid will not run through the tube of the trocar; and when tepid water is to be injected into the cyst, to remove decomposing fluids, the greatest caution should be used, as this injection has been sometimes speedily followed by peritonitis and death.

The puncture of the tumour was followed by cure in the following instance.

CASE 85.—In 1845 I was consulted by the relatives of Miss L., twenty-five years of age, with dark hair and eyes, and, until lately, of a healthy complexion. She first menstruated at thirteen; the flow continued regular, but was attended by much pain. Two days previous to the last menstrual epoch, she got wet through whilst out walking; the flow came on as usual, but it was scanty. When I saw the patient she was suffering from great pain over the hypogastric region, and exploration was impossible. There was slight fever. I ordered twelve leeches to the right iliac region, which seemed to be the most painful, large poultices, and repeated doses of castor oil. The patient progressed favourably, but before she was able to leave her bed, the time for the appearance of her courses returned, but there was no flow, and she became worse. I found her in great agony, referring her pains to the abdomen, which was much distended, though partly by intestinal meteorismus. She had vomited some green mucus, the pulse was wiry and at 110; $\frac{3}{4}$ x of blood were taken from the arm, twelve leeches were applied to the hypogastric region, and followed by fomentations and enemata. In a few days the patient recovered from this attack of peritonitis, the abdomen became less painful, and, through the abdominal parietes, a globular tumour could be felt, occupying a central position in the pelvis, dipping deeply into its cavity, giving her the appearance of being about five months pregnant. The vagina was so forcibly pressed against the pelvis that it was difficult to introduce the finger, and thus was explained the difficulty of passing water. The womb was high up; its neck was firm, as in the unimpregnated state. On introducing the finger into the rectum it was found flattened, and jammed into the concavity of the sacrum. This explained the obstinate constipation, which had continued for the last few days. The tumour contained liquid, for on placing one hand upon it in the hypogastric region, and the index of the other hand in the vagina, fluctuation could be felt. It was therefore an encysted tumour in the pelvis, and in the recto-vaginal space. The sudden subsidence of inflammatory symptoms proved that peritonitis had been only local, and that this large tumour could not be purulent; I therefore thought it a sanguineous cyst, and I plunged a long trocar into it through the posterior

wall of the vagina, an inch below the insertion of the neck of the womb. Two pints of dark syrupy blood were passed through the canula, which was left in the wound. The patient felt instant relief. Dark blood continued to ooze out during the following days, and the canula was withdrawn. At the next period the menstrual flow was scanty, but the patient gradually recovered, and lost her pallid hue.

Unless the patient be anæmic, it is well to promote the absorption of the effused blood by two or three applications of four leeches to the neck of the womb at a few days' interval; and at all events leeches should be applied to the neck of the womb when the menstrual flow becomes due, whether it appears or not. The internal and external exhibition of opium until narcotism is produced, not only quells the vomiting and nervous excitement, but checks the morbid impulse which impels the blood from the organs of reproduction. Mr. Wade of Birmingham has stated that a cure is sometimes brought about by the passage of the effused blood from the pelvis through the oviducts, womb, and vagina; but this has not been ascertained by a post-mortem examination in the five cases where he believes it to have occurred.

With regard to the prevention of hæmatocele, all the patients suffered more or less from dysmenorrhœa; or, in other words, the occurrence of hæmatocele is one of the penalties of allowing the menstrual function to be habitually morbid—a fit conclusion of a work written to impress upon the profession that almost all diseases of women have their origin in morbid menstruation, and are therefore susceptible of being prevented by greater attention to the irregularities of this important function.

BIBLIOGRAPHICAL INDEX OF OVARIAN PATHOLOGY.

*"Nescire quod antequam natus esses
factum sit, id semper esse puer."*—CICERO.

THE value of any scientific work is greatly enhanced by the addition of a list of the principal works to which the Author has been indebted. This acquaints his readers with the school and age, the doctrines of which have influenced the writer; it enables those who study as well as read to refer to sources, and test the author's veracity and judgment; while to subsequent labourers in the same field, such a list of references is like a map to travellers in an unknown country; and the importance of Medical Bibliography has greatly increased, now that the Press teems every year with medical works,

It will have been observed that the medical press of the last ten years has furnished me with facts on which to found a wider view of ovarian pathology, and I am also indebted to another source of medical bibliography—the theses which are written and defended by those who take their degree in Continental universities.

The importance of this branch of literature is somewhat overlooked by English medical authors. In the great Continental medical schools the candidate for the doctoral cap generally takes for the subject of his thesis some of the striking cases he has met with in hospital practice, or the latest discovery; and frequently the facts and theories of a celebrated "*Capo di scuola*" are only to be found in the thesis of their favourite pupils. It was so with Stahl, and has been the case in our time with Recamier. Thus many facts are buried in dissertations which, although printed, have scarcely been brought to light.

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COMMENTS ON THE FIRST EDITION.

"Dr. Tilt's views on the pathology of the ovaries are likely to modify and improve the present treatment of uterine disease. He could not have selected a subject more difficult as to its practical details; and we regard it as a seasonable and valuable publication, well deserving the attentive perusal of those who are interested in obstetric medicine."—*British and Foreign Medical Review*.

"We rejoice to see that physicians of weight and authority are beginning to look beyond the os and cervix uteri for the causes of disease in these parts. Already a reformation somewhat analogous to what Abernethy effected for surgical diseases has commenced, and we feel assured that Dr. Tilt's work will powerfully co-operate in helping it forward, and in placing the pathology and therapeutics of diseases of the female generative organs upon a sound and permanent basis."—*Dublin Quarterly Review*.

"From a careful perusal of Dr. Tilt's work, we feel fully justified in affirming that in none other will be found so complete an account of the various ways in which sterility is produced by the action of inflammation on the ovarian tissues; of the importance of ovarian peritonitis as a cause of disordered menstruation; or of the influence of ovarian inflammation in the production of uterine disease; facts forcibly exemplified, and shown to be not mere conventional probabilities, but events of common occurrence. Investigating a subject beset with extreme difficulties, Dr. Tilt has given the profession a work of real practical value, which we consider to be indispensable to all those who attend to the diseases of women."—*Quarterly Medical Recorder*.

"In our opinion the work of Dr. Tilt is one calculated to do much good. By collecting and arranging in a systematic form the facts and observations in relation to the affections of which he treats, he deserves our thanks; and by the additional observations he has furnished, and the views he has advanced, he has unquestionably prepared the way for a more accurate acquaintance with ovarian pathology, and a more rational management of some of the most distressing and heretofore unmanageable of the diseases of the reproductive organs in the female."—*American Journal of Medical Sciences*.

"We recommend the work of Dr. Tilt, both on account of the practical importance of the subject of which it treats, and the lucid and logical manner in which the novel doctrines advanced in it are deduced from premises that are certainly undeniable."—*Lancet*.

"Dr. Tilt has, we think, brought forward sufficient evidence of the important part which inflammation of the ovaries exerts in occasioning derangement or disorder of menstruation; and his work is calculated to prove of much service, by calling the attention of practitioners to these organs. We recommend it to our readers, convinced that the principles laid down in it will lead to a more correct, and therefore a safer line of practice in a large number of cases."—*Dublin Medical Press*.

COMMENTS ON THE SECOND EDITION.

"Had the production of Dr. Tilt been merely a second edition, we should observe that the author has thoroughly reconsidered the subjects of his previous investigation, enriched a former work with many new facts, and added chapters on the diagnosis of acute and subacute ovaritis. A chapter on the phenomena of sanguineous pelvic tumours is also worthy of attention. Dr. Tilt has given this edition a wider scope, devoting the first 150 pages to the execution of a plan already suggested in the preface to the first edition. Considering the perfect comprehension of the process of menstruation as the keystone of the pathology of female diseases, the author has subjected each symptom of menstruation to a searching inquiry, carefully following the changes by which from healthy it becomes morbid. He then shows to what extent each symptom is met with in the various acts of reproductive life. For instance, in studying one of the well-known cerebral symptoms of menstruation—hysteria—after establishing the passage from the morbid irritability of the nervous system habitually attendant on each catamenial period, with the various perversions of nervous action which characterize hysteria, Dr. Tilt indicates to what an extent hysterical phenomena may be expected when menstruation first occurs, when the function is regularly established, and then inquires into the frequency of hysteria as the result of connexion, pregnancy, parturition, lactation, and as a subjective symptom of ovarian and of uterine disease. The therapeutical indications of the hysterical diathesis, of hysterical fits, and hysterical apoplexy, are then clearly stated. By doing this in succession for each symptom of menstruation, Dr. Tilt has more accurately established the physiological and morbid effects of the reproductive organs on the system, and has laid the basis of more rational modes of treatment.

"Each chapter contains facts interesting both to the physiologist and the practitioner. Space, however, will only permit us to indicate the contents of the first chapters; our readers may from this form an idea of the nature of the work.

"The first chapter gives a succinct account of the theories of menstruation, and leads to the conclusion that menstruation is certainly ovarian, but not necessarily ovular.

"The second chapter treats of the natural history of menstruation; embodies the statistical researches on which the author has been long engaged; corroborates those of Brierre de Boismont, and unpublished statistics from Sweden.

"Type in menstruation is the title of the third chapter; and if the author's observations are correct, menstruation should always be considered morbid when it occurs more than once a month.

"In the fourth chapter the nature of the ovarian nismus, or of the menstrual force, is considered, and admitted to be a manifestation of a power inherent in the ganglionic nervous system.

"The fifth chapter, on the ganglionic nervous symptom of menstruation, contains much that is new in the treatment of unclassified symptoms of ill-health, such as the heats and flushes by which women are often much annoyed; various singular epigastric morbid phenomena, chlorosis, &c.

"The sixth is a long chapter, and contains a very important account of the

cerebral symptoms of menstruation; and the author's reflections on the production of insanity deserve to be weighed by mental pathologists. The spinal symptoms are considered in the following chapter; and in the eighth the critical discharges of menstruation come under discussion. The ninth chapter is occupied by all that relates to the sanguineous discharge of menstruation. The mucous discharges form the subject of the tenth chapter, and it will be read with interest now that uterine pathology excites so much attention.

"The eleventh chapter contains much interesting matter respecting the intestinal discharges of menstruation; and the twelfth, an account of the influence of the menstrual nîsus on the skin and the kidneys. The work concludes with a copious general index and a bibliographical index of all recent contributors to ovarian pathology. This last addition has been too much neglected by medical authors, who might imitate Dr. Tilt's manner of compiling so useful a guide to future research.

"We have now rapidly accompanied the author through the first part of this work, and we think that its perusal will convince our readers that it exceeds in value his former contributions to medical science. The second part received our meed of approbation when it appeared before the public as a first edition, and the whole now together embodies a vast collection of facts, re-cast, condensed, and judiciously used, while much is *suggested* on unsettled points which will doubtless stimulate the thoughts and inquiries of those engaged in similar pursuits.

"In conclusion, we believe that Dr. Tilt's *Diseases of Women* will be considered an addition valuable to medical libraries. If we are not deceived, it will soon find favour with the junior members of the profession, inasmuch as it contains what we should call *the first principles of female pathology*."—*Lancet*.

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“On y trouvera une étude très bien faite et toute nouvelle des réactions nerveuses et réflexes que les désordres ovariens et utérins exercent sur toute la machine sensible de la femme. On comprendra avec lui une foule de manifestations pathologiques qui sont le désespoir du médecin clinique. Cette partie de l’œuvre du médecin anglais suffirait à elle seule pour grandir encore, si cela était possible, la réputation que le docteur Tilt s’est acquise comme praticien des plus distingués, comme savant physiologiste, et pour le placer parmi les écrivains dont les travaux ont fait faire un pas réel aux maladies de la compagne de l’homme. Ajoutons que le livre que nous voudrions faire connaître plus au long, se distingue encore par une profonde érudition, de la richesse dans le style, et une saveur scientifique qu’on ne trouve pas toujours dans les œuvres de ce genre.”—*Union Médicale*, August, 1857.

* London : Churchill, New Burlington-street.

ELEMENTS OF HEALTH,

AND

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"There are two kinds of popular medical writers. Those who introduce the public into the sanctuary of medical science, and tempt them to poison themselves by injudiciously taking medicines; and those who seek to improve the sanitary state of mankind by diffusing a knowledge of the general laws which govern nature, in relation to living creatures, and by imparting those precepts of physiology which, if duly observed, would prevent disease. The first class of writers we heartily condemn. To illustrate the second we point to the names of Drs. James Johnson, Mayo, and, particularly, Dr. A. Combe, deeming them benefactors of the human race. Following in the footsteps of those just mentioned, is Dr. Tilt. In his *Elements of Health* he has successfully done for women what the others have done for men, and his work is a model for those who propose writing on similar subjects, for in a vast plan every subject receives comment in proportion to its importance, and is lucidly explained so as to bring conviction to every woman of ordinary capacity. The work is characterized by extreme delicacy of expression, a healthy tone of feeling, free from all mawkish leaning to the prejudices of the sex, and it is written in a style which rivets the attention and carries on the reader from page to page. Our space is claimed by professional subjects, so that we cannot review this book so completely as we could wish. We can merely trace its general plan and prevailing idea. Each successive period of seven years forms a chapter, in which the mental and moral progress of decay are sketched, while the physical is treated at full length. Food, sleep, exercise, clothing, occupations, are separately considered; and the chapter concludes with a brief account of the diseases which are common to each epoch, and of the indications heralding their approach, which render medical advice imperative. Dr Tilt's prevailing idea seems to be, that further improvement in the sanitary condition of society is to be principally effected by giving women an insight into the laws to which they are subjected, as living beings and as women; their own health, the improvement of the human race, and the welfare of society being attainable by that means. The work seems also to commend itself to the profession by the careful manner in which is therein laid down the means of preventing that exaggeration of the nervous temperament, which is so fruitful a source of the diseases of women. In conclusion we shall only add, that as Dr. Tilt's is the only work of the kind—at least, in English literature, we trust it will be considered an indispensable guide by persons to

* London: Bohn, York-street, Covent-garden.

whom may be intrusted the sacred task of educating the present generation of children, who are necessarily to become our future generations of men and women."—*Lancet*.

"In the *British and Foreign Medico-Chirurgical Quarterly Review* it was lately remarked that a treatise on female hygiene was much wanted; and all those engaged in general practice who have to contend daily with the ignorance and prejudices of women respecting themselves and their children will re-echo the assertion of our respected contemporary. Dr. Tilt has sought to fill up this desideratum; and we are anxious to be among the first to notice a book which originated in our columns. Two years ago, Dr. Tilt inserted in this journal some highly interesting papers on the right management of women at the critical periods of life. These papers have suggested to the author the present work, of which we intend briefly to sketch the outline. The work is divided into periods of seven years, and each period forms a chapter. Each chapter briefly notices the mental and moral development or decay, and the physical condition is treated with care. The food, clothing, exercise, and sleep, as regards each epoch, are passed in review; and the diseases to which women at each period are most liable are pointed out, as well as the most appropriate means of prevention. Every chapter is preceded and followed by tables showing the mortality of both sexes for each year successively, the mean duration of life, and its value for insurance purposes; calculations which derive importance from the fact of their having been made under the eye of Mr. Farr, of the Registrar-General's office. Such is the outline of a work which combines a vast amount of information in a small compass, and of which we regret that our space will not allow us to give extracts; it is much required, and will doubtless, ere long, become as popular as those of the late lamented Dr. Combe. Perhaps no man is better calculated than Dr. Tilt to fill up this hiatus in medical literature: for few unite to the same extent great opportunities of observation with sterling common sense, a thorough love of his subject, and a lucid, correct, and lively style. We think the work will be found as useful to the practitioner as it is indispensable to those who are in any way connected with the education or responsibilities of women, for while, on the one hand, it is the best treatise on physical education with which we are acquainted, it also affords practitioners excellent advice respecting the prevention of nervous complaints, and, in fact, of all the diseases to which women are amenable from the peculiarities of their formation and habits."—*Provincial Medical and Surgical Journal*.

"Dr. Tilt has chosen a subject which required great tact and delicacy for its treatment; and though such a work was much wanted, it has been this feeling probably which has deterred writers from entering on the field before. We think Dr. Tilt has succeeded. He has taken up most carefully all those departments of statistical inquiry which throw light on the differences that exist in the constitution and temperament of the sexes, and in all parts of his work has treated the subject in both a learned and a practical manner."—*Athenæum*.



*London, New Burlington Street,
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